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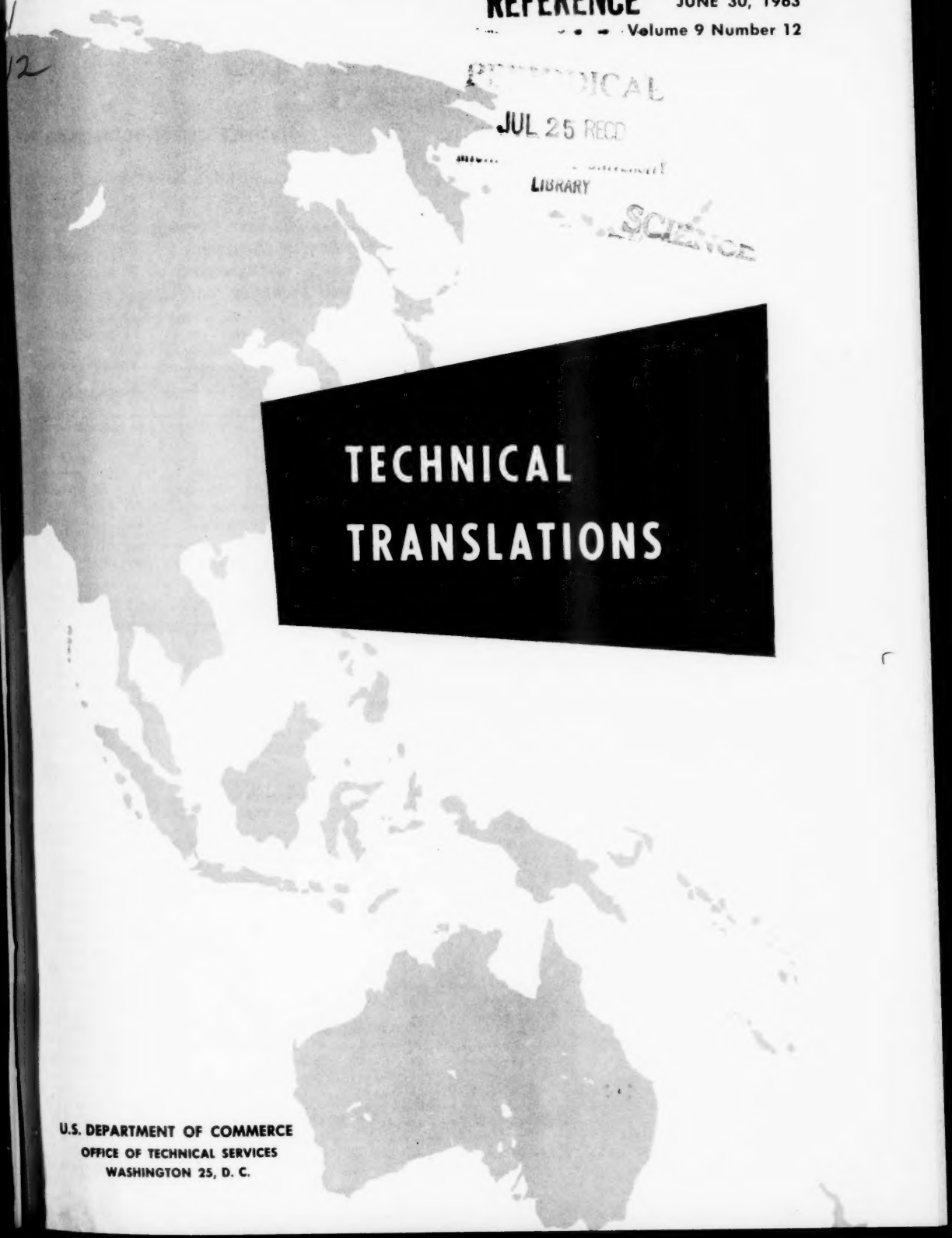

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES

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CONTENTS

	Page
HOW TO ORDER TRANSLATIONS	iii
BIBLIOGRAPHY	1185
AGRICULTURE	1186
Animal Husbandry	1187
Plant Cultivation	1187
ASTRONOMY	1189
Astrophysics	1190
BEHAVIORAL SCIENCES	1191
BIOLOGICAL SCIENCES	1192
Anatomy and Physiology	1193
Biochemistry	1194
Botony	1196
General Biology	1196
Medical Specialties and Equipment	1196
Microbiology	1197
Pathology	1198
Pharmacology and Toxicology	1201
Radiobiology	1205
Surgery	1206
Zoology	1206
CHEMISTRY	1208
Analytical Chemistry	1208
Inorganic Chemistry	1211
Organic Chemistry	1211
Physical Chemistry	1216
EARTH SCIENCES	1221
Geodesy	1222
Geology	1223
Meteorology	1225
Oceanography	1226
Physics and the Atmosphere	1227
ENGINEERING	1229
Chemical Engineering	1231
Civil Engineering	1236
Electrical and Electronic Engineering	1236
Mechanical Engineering	1240
Ordnance, Missiles, and Satellite Vehicles	1240
FOOD, HANDLING, AND PACKAGING EQUIPMENT	1241
MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT	1241
Engines and Propulsion Systems	1242
Machine Parts and Mechanisms	1243
Manufacturing Equipment and Processes	1244
Transport, Traction, and Hoist Facilities	1245
MATERIALS	1246
Ceramics and Refractories	1247
Fuels, Lubricants, and Hydraulic Fluids	1248
Leather and Textiles	1249
Paints and Finishes	1251
Photographic Materials	1252
Plastics	1252
Rubber and Elastomers	1253
Wood and Paper	1253
MATHEMATICS	1254
Computing Devices	1255
MECHANICS	1255
Aerodynamics and Pneumatics	1256
Hydrodynamics, Hydraulics, and Hydrostatics	1257
Statics, Kinematics, and Kinetics	1257
METALLURGY	1257
Ferrous Metals	1261
Nonferrous (except light) Metals	1263
Structural Metallurgy and Corrosion	1264
NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY	1265
Elementary Particles	1267
Instruments and Installations	1267
Nuclear Engineering	1267

	Page
PHYSICS	1270
Acoustics	1270
Electricity and Magnetism	1270
Molecular Physics and Spectroscopy	1272
Optics	1273
Solid State Physics	1273
Theoretical Physics	1276
Thermodynamics	1276
Wave Propagation	1277
RESEARCH METHODS, TECHNIQUES AND EQUIPMENT	1278
SOCIAL SCIENCES	1279
BOOK REVIEWS	A-23
TRANSLATIONS IN PROCESS	B-29
PERIODICALS TRANSLATED COVER-TO-COVER	C-31
AUTHOR INDEX	I-1
SUBJECT INDEX	I-4
JOURNAL INDEX	I-13
NUMBER INDEX	I-18

Page
1270
1270
1270
1272
1273
1273
1276
1276
1277
1278
1279

A-23
B-29
C-31
I-1
I-4
I-13
I-18

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TECHNICAL TRANSLATIONS

Volume 9, Number 12 | Pages 1185 - 1279 | June 30, 1963

*Descriptors marked with an asterik are included in the subject index.

BIBLIOGRAPHY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 129 (GENERAL SERIES). 9 Apr 63 [32]p. JPRS: 18617.
Order from OTS $1.00 63-21544

Abstract trans. of Bulgarska Akademiya na Naukite. Doklady, 1962, v. 15, no. 5, p. 467-581 and no. 6, p. 589-692.

DESCRIPTORS: *Abstracts, Bibliography, *Solid state physics, *Meteorology, *Chemistry, *Plants (Botany), *Metallurgy, *Biology, Cytology, Biochemistry, *Physics, Mechanics, *Medicine, Drugs.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 130 (GENERAL SERIES). 15 Apr 63 [25]p. JPRS: 18693.
Order from OTS $0.75 63-21571

Consists of abstracts of articles from the scientific and technical journals of Bulgaria and Rumania.

DESCRIPTORS: *Abstracts, Bibliography, *Mathematics, Electronics, *Solid state physics, *Physics, *Chemistry, *Biology, *Biochemistry, *Spectroscopy.

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS.
May 63, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

Zatrutina, R. F. and Rubina, L. S.
BIBLIOGRAPHIC LIST OF LITERATURE IN RUSSIAN FOR 1959 INTERNATIONAL GEOPHYSICAL YEAR, tr. by Lloyd G. Robbins. June 61 [68]p. 793 refs.
AERDL T-1140.
Order from OTS or SLA $6.60 62-32098

Trans. of [Akademiya Nauk SSSR. Mezhduvedomstvennyi Komitet po Provedenyu Mezhdunarodnogo Geofizicheskogo Goda]. Bibliograficheskii Ukazetal' Literatury na Russkom Yazyke (USSR) 1959, 88p.

DESCRIPTORS: *Bibliographies, Scientific organizations, Conferences, Terrestrial magnetism, Night sky, Aurorae, Ionosphere, Meteors, Solar disturbances, Cosmic rays, Glaciers, Oceanology, Rockets, Geology, Meteorology, Arctic regions, *Geophysics, Satellites (Artificial).

The bibliography contains 800 references to books and articles on general and special problems of the IGY. The references in the bibliography are systematized mainly according to the disciplines of the IGY program. Due to the many publications dealing with research problems of the Arctic and Antarctic and with the geophysical researches with rockets and artificial earth satellites, these sections of the bibliography are divided into several subsections. Within each section or subsection, the references are arranged alphabetically according to the names of the authors or titles of papers. When a collection of articles on one scientific discipline is mentioned, all the articles of the collection are given immediately after the title under which the collection appeared. If the articles in a collection belong to various disciplines, they are then given in the correspondings sections of the bibliography. Abstracts are provided only for articles the titles of which do not clearly indicate the subject of the paper.

JOURNAL FOR SCIENTIFIC AGRICULTURAL RESEARCH, 1962, VOL. 15, NO. 47, tr. by Bozidar Filipovic. 1963, 146p. 103 refs. PL-480 Agr.
Order from OTS $1.50 62-11755/1

Trans. of Arhiv za Poljoprivredne Nauke [i Tehniku] (Yugoslavia) 1962, v. 15, no. 47.

DESCRIPTORS: *Agriculture, *Scientific research, *Chickens, Feeding, *Soils, *Fruits, *Hymenoptera, Yeasts, *Wines, *Plants (Botany), Seeds, *Bacteria, *Grasses, Bovines, *Apples, Agricultural machinery, Fertilizers, *Corn, Insects, Yugoslavia

Contents:
The effectiveness of various levels of proteins and calories in feeds for fattening broilers, by S. Zivkovic and others
The composition of the humus in the reddish-brown forest soils formed on the limestones of the hilly and mountainous part of Serbia, by M. Bogdanovic
Ecological conditions for the development of fruit growing in the valley of the Dezevska River, by N. Pavicevic and R. Corovic
The significance of bees (Apis sp.) and wasps (Vespa sp.) as carriers of yeasts, for the microflora of grapes and the quality of wine, by B. Stevic
Comparative investigations of the activity of strains of Rhizobium meliloti and Rhizobium trifolii, by V. Petrovic
On the Meadow Association Danthonietum calycinae in Western Serbia, by T. Cincovic and M. Kojic
Contribution to the study of the variability or the morphological characteristics of apples used for determining the variety, by D. Rahovic
Contribution to the study of subsoil tillage as a technical measure in viticulture, by L. Avramov and others
The effect of sowing time on the strength of the corn borer's attack and on yields of various varieties and hybrids of corn, by B. Lazarevic and V. Trifunovic
Reviews

JOURNAL FOR SCIENTIFIC AGRICULTURAL RESEARCH, 1962, VOL. 15, NO. 48, tr. by Bozidar Filipovic. 1963, 150p. 85 refs. PL-480 Agr.
Order from OTS $1.50 62-11755/2

Trans. of Arhiv za Poljoprivredne Nauke [i Tehniku] (Yugoslavia) 1962, v. 15, no. 48.

DESCRIPTORS: *Agriculture, *Scientific research, *Swine, Genetics, Reproduction, *Wheat, Growth, Fertilizers, Seeds, *Grasses, Radiation effects, X-rays, Straw, *Plants (Botany), Soybean oil, Parasites, Moths, Corn, *Agricultural machinery

Contents:
A contribution to the investigation of the reproductive capacity of Large Whites under the breeding conditions in Banat, by D. Nikolic and others
The effect of different sowing densities and the amount of fertilizer on the growth development and yield of some wheat varieties, by J. Mirzinska and B. Jovanovic-Tesic
The effect of fertilizers and the density of sowing on the yield of seeds of English perennial rye grass (Lolium perenne L.) by M. Stanojevic
The effect of the density of sowing on the yield of Lucerne hay, by S. Ocokoljic
The effect of x-ray radiation on some biological changes in soybeans, by A. Mitrovic and others
Origin and characteristics of guano in the Radavacke caves, by M. Bogdanovic and others
A new method of multiplying the egg parasite of the gypsy moth Ooencyrtus Kuwanae How, by P. Bjegovic
Investigation into corn harvesting machines, by N. Ruzicic and others
Reviews

Chekalov, K. I.
MATERIALS CONCERNING THE APPLICATION OF MATHEMATICAL THEORY OF THE FACTORS OF GROWTH: THE ACTION OF WATER, tr. by L. Kogan. [1962] [22]p. (refs. omitted) 3 refs.
Order from OTS or SLA $2.60 63-10132

Trans. from Vsesoyuznyi Nauchno-Issledovatel'skii Institut Udobrenii [Agrotekhniki] i Agropochvovedeniya, Leningradskaya Laboratoriya. Byulleteni (USSR) 1930, no. 28.

DESCRIPTORS: *Agriculture, Production, Growth, Light, *Water, Fertility, Soils, *Mathematical prediction.

Koval'skii, V. V.
BIOGEOCHEMISTRY, tr. by V. P. Sokoloff. [1962] [9]p.
Order from OTS or SLA $1.10 62-33773

Trans. of Priroda (USSR) 1962 [v. 51] no. 6, p. 54-59.

DESCRIPTORS: Biochemistry, Geology, *Soils, *Animals, Diet, Additives, Plants (Botany), *Deficiency diseases, Microanalysis.

Placement of animal husbandry on a chemical basis [including] development of substitutes for natural feeds or of concentrates augmenting food value of the latter, is one of the most important problems of the national economy. Synthetic products: urea, ammonium salts, aminocarbohydrates, and other nitrogenous compounds or vitamin preparations, antibiotics, micro-elements, partial replacements of protein, are valuable supplementary nutritive substances. Their addition to feeds, in many instances, prevents endemias and other diseases of economic animals. (Author)

Szklarz, Wladyslaw.
INVESTIGATION ON THE SIZE OF DROPS IN OVERHEAD IRRIGATION (Badania Wielkosci Kropli Podczas Deszczowania) tr. by D. Lachert. 1963 [14]p. 13 refs. PL-480 Int.
Order from OTS $0.50 61-31312

Trans. of [Melioracja] (Poland) 1958, v. 3, p. 143-155.

DESCRIPTORS: *Drops, Sizing, *Sprinklers, *Irrigation systems, Effectiveness, Distribution, Evaporation, Agriculture, *Water supplies, Soils, Moisture, Raindrops.

Animal Husbandry

Likhachev, N. V., Bazylev, P. M. and others.
PROBLEM OF EXCRETION OF A LAPINIZED VIRUS OF SWINE PLAGUE BY VACCINATED ANIMALS AND THE EFFECTIVENESS OF PERORAL AND AEROSOL VACCINATION METHODS (K Voprosu Vydeleniya Lapinizirovannogo Virusa Chumy Svinei Vaktsinirovannymi Zhivotnymi i Effektivonosti Peroral'nogo i Aerozol'nogo Metodov Vaktsinatsii). 5 Dec 62, 13p. 4 refs. Trans. V-1810.
Order from OTS or SLA $1.60 63-13410

Trans. of Gosudarstvennyi Nauchno-kontrol'nyi Institut Veterinarnykh Preparatov. Trudy (USSR) 1961, v. 9, p. 50-57.

DESCRIPTORS: *Excretion, Urine, Swine, Immunity, *Hog cholera virus, Epidemiology, *Inhalation immunization, Immunity, Veterinary medicine, Vaccines.

On the basis of the experiments conducted, it was established that a portion of the young boars which were immunized perorally by means of making them drink large doses of the live lapinized vaccine "ASV" or "Rovak" three times, can acquire resistance to subsequent inoculation with a virulent strain of the swine plague virus. Vaccination by the aerosol method using large doses of vaccine can also create immunity against plague in individual young boars. (Author)

Lutsevich, F. F.
RESULT OF TESTING THE VIEV EXPERIMENTAL RABBIT ANTI-FMD VACCINE UNDER PRODUCTION CONDITIONS (Resul'taty Ispytaniva Opytnoi Krolich'ei Protivoyashchurnoi Vaktsiny VIEV v Proizvodstvennykh Usloviyakh). 15 Oct 62, 6p. Trans. V-1800.
Order from OTS or SLA $1.10 63-13024

Trans. of Vsesoyuzny Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1961, v. 25, p. 99-102.

DESCRIPTORS: Rabbits, Vaccines, *Virus vaccines, *Foot-and-mouth disease, Toxicity, Animals, Immunity, Epidemiology.

Plant Cultivation

Berbec, Jan and Bawolska, Maria.
INVESTIGATIONS ON THE INACTIVATION OF THE TOBACCO MOSAIC VIRUS BY HEATING (Badania nad Inaktywacja Wirusa Mozaiki Zwyklej (Tobacco Mosaic Virus) przy Pomocy Nagrzewania) tr. by A. Radziwill. 1962 [11]p. 12 refs. PL-480 Agr.
Order from OTS $0.50 61-11371

Trans. of Hodowla Roslin, Aklimatyzacja i Nasiennictwo (Poland) 1957, v. 1, no. 2, p. 125-134.

DESCRIPTORS: *Tobacco mosaic virus, Inhibition, Heating, Temperature, *Virus diseases, Plants (Botany), Tobacco, Seeds, Decontamination.

Investigations carried out in Pulawy in 1951 - 1955 on the possibility of inactivation of the tobacco mosaic virus in pulverized tobacco leaves by means of dry heating showed: (1) Dry heating for 81 - 110 minutes at 80°C does not cause inactivation of the virus. (2) Dry heating for 46 - 85 minutes at 100°C produces a very slight inactivation of the virus. (3) Dry heating at gradually rising temperatures up to 110°C gives a high degree of inactivation of the virus; the duration of heating at 100 - 110°C seems to be of great importance (the shorter the heating the weaker the inactivation effect of temperature). (Author)

Braun, R. and Kradolfer, F.
CHEMOTHERAPHY OF PLANT VIROSES (zur Chemotherapie Pflanzlicher Virosen). Jan 63, 11p. 13 refs.
Order from SLA $1.60 63-10725

Trans. of Phytopath[ologische] Zeitschrift (Germany) 1961, v. 41, p. 257-264.

DESCRIPTORS: *Chemotherapuetic agents, Plants (Botany), Virus infections, *Tobacco mosiac virus, Toxicity, Viricides.

The influence of a number of substances on the infectivity of tobacco mosaic virus (TMV) and Solanum virus X was tested by the local lesion technique. The following substances were, for the first time, found active against plant viruses: hematoporphyrin, hydrazine sulfate, benzoquinone, a diazoalkanyl ester and bis-pyrimidine-diphenyl-aminosulfone. In addition, the adsorption of TMV to various difficulty soluble substances was investigated. One compound, a triterpene-like substance, adsorbed TMV quantitatively from an aqueous solution. (Author)

Duchaufour and Bonneau.
A NEW METHOD FOR ANALYZING ASSIMILABLE PHOSPHORUS IN FOREST SOILS. [1962] 6p. (refs. omitted).
Order from SLA $1.10 62-20244

Trans. of Assoc[iation] Française pour l'Étude du Sol. Bull[etin] 1959, v. 4, p. 193-198.

DESCRIPTORS: *Colorimetric analysis, *Phosphorus, *Forestry, *Soils, Fertility.

Kursanov, A. L., Kryukova, N. N., and Vartapetyan, B. B.
TRANSLOCATIONS THROUGH THE PLANT OF CO_2 ABSORBED BY THE ROOTS (Dvizhenie po Rasteniyu Uglekisloty, Postupayushchei Cherez Korni) tr. by B. Ribush. [1962] [10]p. (foreign text included) 12 refs. [CSIRO] Trans. 5883.
Order from OTS or SLA $1.10 63-15308

Trans. of Akademiya Nauk SSSR. Doklady, 1952, v. 85, no. 4, p. 913-916.

DESCRIPTORS: *Plants (Botany), Chlorophylls, Absorption (Biological), *Carbon dioxide, Nutrition.

Leflaive, Etiennne.
SOIL MECHANICS: CALCULATION IN PLASTICITY OF THE LIMIT CONTOUR OF AN EARTH TALUS. [1962] 5p. 2 refs.
Order from SLA $1.10 63-10297

Trans. of Academie des Sciences, Paris. Comptes Rendus (France) 1961, v. 252, p. 1904-1906 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Soil mechanics, Terrain, *Plasticity, Numerical analysis.

Lewicki, S., Ruszkowski, M., and Kaszlej. Z.
STUDIES ON BUCKWHEAT. PT. 9. GRAIN AND GREEN FORAGE YIELDS AS DEPENDING ON 10 DIFFERENT SEEDING TIMES (Studia nad Gryka. Cz. 9. Plony Ziarna i Zielonej Masy z 10 Roznych Terminow Siewu) tr. by Maria Radziwill. 1963 [12]p. 4 refs. PL-480 Agr.
Order from OTS $0.50 61-11398

Trans. of Hodowla Roslin, Aklimatyzacja i Nasiennictwo (Poland) 1959, v. 3, no. 2, p. 195-206.

DESCRIPTORS: *Buckwheat, *Cereals, Seeds, Growth, Plants (Botany), Production, Agriculture.

The experiments carried out in the period 1955-1957 showed that buckwheat should be sown in May or in the 1st decade of June, if good yields of grain (about 12 q/ha) are to be obtained. The grain yield from plants sown in the 2nd and 3rd decade of June did not exceed 6 q/ha and from those sown in July and August - 1 q/ha. Late sowing of buckwheat as after-culture is unprofitable as regards grain. With the decrease in grain yield from late seedings, the percentage of undeveloped seeds rises markedly.

Polyakov, Yu. A.
THE ADSORPTION OF STRONTIUM AND CALCIUM IONS BY SOILS (O Pogloshchenii Ionov Strontsiya i Kalntsiya Pochvami), tr. by Ivan Mittin. 1962 [12]p. 19 refs.
Order from OTS or SLA $1.60 63-13871

Trans. of #Kolloidnyi Zhurnal (USSR) 1959, v. 21, no. 2, p. 221-225.

DESCRIPTORS: *Strontium, *Calcium, *Ions, *Adsorption, *Sorption, *Radioactive isotopes, *Soils, Exchange reactions, Ion exchange, Equations, Thermodynamics.

With the aid of the method using radioactive isotopes, the exchange adsorption of strontium and calcium ions on soils and clays was studied. Basic criteria of equilibrium were studied and principle thermodynamic functions (ΔH_{298}, ΔF^{o}_{298}, ΔS_{298}) were calculated. The numerical values of H, F, S, indicate the isoenergetic character of the reaction in consideration; they indicate also that the adsorption compound of (S)Sr is, thermodynamically, more stable than the (S)Ca. The data obtained were used in calculations of the most probable value of the coefficient of discrimination of Sr^{90} in the soil-plant system, which in all considered cases happened to be < 1 and varied from 0.8 to 0.9. (Author)

Riegerowa, Halina and Slabonski, Andrzej.
SMUT RESISTANCE OF CORN VARIETIES INVESTIGATED BY THE METHOD OF FIELD INFECTION (Badania nad Odpornoscia Odmian Kukurydzy na Glownie Metoda Polowych Zakazan) tr. by W. Kulerski. 1962 [30]p. 59 refs. PL-480 Agr.
Order from OTS $0.50 61-31272

Trans. of Hodowla Roslin, Aklimatyzacja i Nasiennictwo (Poland) 1957, v. 1, no. 1, p. 31-57.

DESCRIPTORS: *Fungus infections, *Corn, Plants (Botany), Spores, Genetics, *Mutations, Agriculture.

Investigations on the resistance of maize varieties to smut, made with the aid of the method of field infection, gave results adequate for estimating the susceptibility of particular varieties and have demonstrated that varieties genuinely resistant to smut are not available in this country, that the varieties investigated differ widely in susceptibility, and that the flint varieties are among the most susceptible, whereas the dent varieties with a relatively long vegetation period are among the least susceptible. (Author)

Rubin, B. A., and Volobueva, P.
THE ACTIVITY OF THE POLYPHENOL OXIDASES OF THE TISSUES OF THE COTTON PLANT AS RELATED TO THE RESISTANCE OF THE PLANT TO THE FUNGUS VERTICILLIUM ALBO-ATRUM. [1962] [6]p. 1 ref.
Order from OTS or SLA $1.10 63-13583

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1951, v. 79, no. 4, p. 637-638.

DESCRIPTORS: *Phenols, *Oxidases, Plants (Botany), Diseases, Tissues (Biology), *Cotton, *Fungus infections, Actinomyces, Resistance, Enzymes.

The increase in the content of polyphenols which is observed simultaneously with activation of the enzymes catalyzing their oxidation is an example of a defensive reaction which has been developed and intensified in cotton plants during prolonged interaction with the wilt pathogen. The reaction is strongest in those cotton varieties which show a high degree of resistance to wilt. (Author)

Rubin, B. A., and Ivanova, T. M.
THE DYNAMICS OF THE PHENOLS OF CABBAGE TISSUES INFECTED BY BOTRYTIS CINEREA, [1962] [12]p. 14 refs.
Order from OTS or SLA $1.60 63-13580

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 131, no. 2, p. 445-448.

DESCRIPTORS: Adaptation (Physiology), *Plants (Botany), *Fungus infections, *Phenols, *Immunity, Oxidases, Respiration, *Tissues (Biology), Vegetables, Biochemistry.

The data obtained enable us to state that phenolic compounds play an active part in the defensive reactions of cabbage to B. cinerea. (Author)

Rubin, B. A., and Ozeretskovskaya, O. L.
THE HEXOSE MONOPHOSPHATE RESPIRATORY PATHWAY IN POTATO TUBERS. [1962] [22]p. 22 refs.
Order from OTS or SLA $2.60 63-13420

Trans. of Akad[emiya] Nauk SSSR. Izvest[iya. Seriya Biologicheskaya] 1959 [v. 24] no. 2, p. 257-264.

DESCRIPTORS: *Hexoses, Phosphates, *Phosphorylation, Dehydrogenases, Glucose, Enzymes, *Potatoes, Plants (Botany), Diseases, *Immunity, Respiration.

Potato tubers have an enzymatic system for apotomic oxidation. During the entire storage period glucose-6-phosphate and 6-phosphogluconate dehydrogenases show the same kind of changes in activity as does the general respiration rate. Apotomic oxidation was found in the mycelia of the pathogenic fungus Phytophthora infestans. When potato tubers are artificially infected, there are very substantial changes in the activities of the dehydrogenases of apotomic oxidation; such changes in activity differ in varieties with different degrees of resistance. This indicates that these enzymes take part in the reactions of immunity [in plants]. (Author)

Rubin, B. A., Artsikhovskaya, E. V., and Proskurnikova, T. A.
THE OXIDATIVE CONVERSIONS OF PHENOLS AND THEIR ROLE IN THE RESISTANCE OF POTATOES TO PHYTOPHTHORA INFESTANS. [1962] [20]p. 23 refs.
Order from OTS or SLA $1.60 63-13584

Trans. of Biokhimiya (USSR) 1947, v. 12, no. 2, p. 141-152.

DESCRIPTORS: Oxidation, Synthesis, *Phenols, Resistance, *Potatoes, *Fungus infections, Peroxidase, Respiration, Tissues (Biology), Diseases, Plants (Botany).

In potatoes which are distinctively resistant to the fungus Phytophthora (potato variety 12994) the respiration rate and peroxidase activity are higher than in those of the Kur'er variety which is susceptible to infection. Leaves of the resistant variety were found to show an increased content of the more mobile, reactive compounds of the tanning complex. In phytophthora-infected leaves the content of these substances increases, considerably in the resistant variety and slightly in the susceptible variety. The mobile fraction of the tanning substances and the activation of the polyphenol oxidases may possibly play a part in the defensive reactions of the potato leaf tissues. The respiration rate of the leaves and the peroxidase activity do not undergo any noticeable changes as a result of infection. With aging of the leaves there is a decrease in the respiration rate and peroxidase activity. The polyphenol oxidase activity and the composition of the tanning substances are not directly related to age. (Author)

Rubin, B. A., Chetverikova, E. P., and Artsikhovskaya, E. V.
THE OXIDATION SYSTEM AND PLANT IMMUNITY. [1962] [40]p. 47 refs.
Order from OTS or SLA $3.60 63-13421

Trans. of Zhur[nal] Obshchei Biol[ogii] (USSR) 1955, v. 16, no. 2, p. 106-118.

DESCRIPTORS: *Oxidation, *Plants (Botany), Diseases, *Immunity, Fungus infections, Microorganisms, Metabolism, Oxidases.

Rubin, B. A., and Ivanova, T. M.
THE ROLE OF AMINO ACID OXIDASES IN THE IMMUNITY OF CABBAGE TO BOTRYTIS CINEREA. [1962] [36]p. 31 refs.
Order from OTS or SLA $3.60 63-13574

Trans. of Biokhimiya Plodov i Ovoshchei (USSR) 1959, v. 5, p. 113-132.

DESCRIPTORS: *Amino acids, *Oxidases, *Plants (Botany), Diseases, *Immunity, *Fungus infections, Respiration, Tissues (Biology), Vegetables, Biochemistry.

The data obtained confirm that amino acid oxidases play an important role in the defensive reactions of cabbage tissue to the fungus B. cinerea and products of its vital activities. (Author)

Sokolov, D. F.
CHANGE IN THE COMPOSITION OF FOREST LITTER-FALL IN THE PROCESS OF ITS DECOMPOSITION (DECAY) AND MINERALIZATION UNDER LABORATORY CONDITIONS. [1962] 22p. (tables omitted) 15 refs.
Order from OTS or SLA $2.60 62-20266

Trans. from [Akademiya Nauk SSSR. Laboratoriya Lesovedeniya. Soobshcheniya] 1959, v. 1.

DESCRIPTORS: Forestry, *Trees, *Decomposition, *Soils, Synthesis, Moisture, Plants (Botany), Colloids, Solubility, Nitrogen, Organic compounds.

Stanecki, Mieczyslaw.
ACCURACY OF PHOTOGRAMMETRIC MEASUREMENTS OF TREE AND STAND HEIGHTS (Dokladnosc Fotogrametrycznego Pomiaru Wysokosci Drzew i Drzewostanow) tr. by M. Sierpinski. 1962 [11]p. 9 refs. PL-480 Agr.
Order from OTS $0.50 61-11328

Trans. of Roczniki Nauk Lesnych (Poland) 1955, v. 13, p. 45-55.

DESCRIPTORS: *Forestry, *Trees, Measurement, Aerial reconnaissance, *Aerial photography, *Photo interpretation, Errors, *Photogrammetry.

ASTRONOMY

Bystrov, N. F.
PRECISION DETERMINATION OF THE POSITION OF THE CENTER OF THE MOON'S MASS FROM PHOTOGRAPHIC OBSERVATIONS. [1962] [10]p. 6 refs.
Order from OTS or SLA $1.10 63-10598

Trans. of #Astronomicheskii Zhurnal (USSR) 1962, v. 39, no. 3, p. 527-531.

DESCRIPTORS: *Moon, *Position finding, Density, Least squares method, Errors, Measurement, *Photographic analysis.

Factors, which influence the precision of the photographic determination of coordinates of the center of the moon's mass, are investigated. The results of visual and photoelectric measurements of photographs of the moon are compared. A method is proposed for obtaining the position of the center of the moon's mass relative to details on the disk. (Author)

Astrophysics

METEOR TRAIL OBSERVATIONS: COMPREHENSIVE REPORT. 25 Mar 63 [10]p. 3 refs. AID rept. P-63-40.
Order from OTS or SLA $1.10 63-19029

DESCRIPTORS: *Meteors, *Astronomical data, *Radar equipment, Scientific personnel, Astronomical observatories.

The report is divided into three sections: (1) Soviet research facilities conducting meteor trail observations by radar; (2) Radar equipment used in the program; (3) Principal investigators engaged in the program.

Alekseev, V. M.
NEW EXAMPLES OF "CAPTURE" IN THE THREE-BODY PROBLEM. [1962] [18]p. 10 refs.
Order from OTS or SLA $1.60 63-10330

Trans. of #Astronomicheskii Zhurnal (USSR) 1962, v. 39, no. 4, p. 724-735.

DESCRIPTORS: *N-body problem, Motion, Gravity, *Celestial mechanics, Differential equations.

The paper deals with the construction of new examples for the motions in the problem of three material points, attracting each other in accordance with Newton's law, where the phenomenon of "capture" occurs. The applied methods are of a pure qualitative nature and numerical integration is not used. The constructed examples are of a general nature and contain a total number of free parameters. (Author)

Bystrova, N. V. and Demidova, A. N.
THE LOCATION OF ATMOSPHERIC INHOMOGENEITIES DISTORTING THE SOLAR LIMB ON CLEAR AND CLOUDY DAYS, tr. by P. A. Kazakov. [1962] 2p. 2 refs. [CSIRO Trans] 6194.
Order from OTS or SLA $1.10 63-19114

Trans. of Solnechnye Dannye (USSR) 1961, no. 3, p. 73.

DESCRIPTORS: *Atmosphere, Distortion, Cloud cover, Clouds, Solar atmosphere, Galaxies, *Solar disturbances.

Duboshin, G. N.
ON THE RECIPROCAL POTENTIAL OF THE SPHERE AND THE BODY OF ROTATION. [1962] [9]p. 3 refs.
Order from OTS or SLA $1.10 63-10309

Trans. of Moscow U. Vestnik [Seriya Matematiki, Mekhanika, Astronomii, Fiziki, Khimii] (USSR) 1959 [v. 14] no. 4, p. 55-60.

DESCRIPTORS: *Potential theory, *Spheres, *Bodies of revolution, Density, *Celestial mechanics, Inertia, Integrals, Functions, Satellites (Artificial), Series.

In the present article has been optained for certain applications a convenient form for the expansion of the reciprocal potential of two bodies, possessing an arbitrary spherical density distribution of the sphere and the body of rotation, whose density is any integratable function from the distance to a certain plane, which is perpendicular to this axis. The obtained expansion can be applied to different problems of celestial mechanics, for example, to the problem on the forward-rotary motion of an artificial satellite of the earth or of a cosmic rocket. (Author)

Kondurar', V. T.
PARTICULAR SOLUTIONS OF THE GENERAL PROBLEM ON THE TRANSLATIONAL-ROTATIONAL MOTION OF A SPHEROID ATTRACTED BY A SPHERE. [1962] [19]p. 4 refs.
Order from OTS or SLA $1.60 63-10149

Trans. of #Astronomicheskii Zhurnal (USSR) 1959, v. 36, no. 5, p. 890-901.

DESCRIPTORS: Motion, Geometric forms, *Spheres, Rotation, *Celestial mechanics, Satellites, Planets.

This study presents the particular solution of the problem on the translational-rotational motion for the practically important case of the problem on two bodies, when the satellite is a spheroid, whereas the planet is - a sphere. (Author)

Kotel'nikov, V. A., Dubrovin, V. M. and others.
RADAR OBSERVATIONS OF VENUS. Oct 62 [10]p. 7 refs.
Order from OTS or SLA $1.10 62-20397

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 145, no. 5, p. 1035-1038.
Another trans. is available from OTS or SLA $1.10 as 63-13554, JPRS-16728, 17 Dec 62 [9]p.

DESCRIPTORS: *Radio astronomy, *Venus, *Radar signals, Radar reflections, Broadband, Narrowband, Radiofrequency spectroscopy.

This paper describes radar observations of Venus made in April, 1961. A periodically pulsed signal was used, with occasional use of frequency shift keying. The signal was not a pseudo-random type code. Detection was done by spectral energy integration. From these observations, the astronomical unit was estimated to be 149, 599, 350 km ± 570 km and the period of rotation of Venus approximately 9 to 10 days. (Author)

Kuznetsova, G. V., Pariiskii, Yu. N. and others.
ECLIPSE OBSERVATIONS OF SOLAR RADIO EMISSION ON 15 FEB 61, AT A WAVELENGTH OF 9 CM, tr. by P. A. Kazakov. [1962] 3p. 3 refs. CSIRO [Trans] 6072.
Order from OTS or SLA $1.10 63-13240

Trans. of Solnechnye Dannye (USSR) 1961, no. 4, p. 65-67.

DESCRIPTORS: *Extraterrestrial radio waves, *Solar eclipses, *Radio astronomy, Astronomy.

Novoselov, V. S.
ON THE PROBLEM OF THE MOTION OF TWO BODIES WITH VARIABLE MASSES. [1962] [4]p. 2 refs.
Order from OTS or SLA $1.10 63-10308

Trans. of Leningrad U. Vestnik (USSR) 1957 [v. 12] no. 13 [Seriya Matematiki, Mekhaniki i Astronomii, no. 3] p. 129-131.

DESCRIPTORS: *Celestial mechanics, *Motion, Solids, Density, Differential equations, Integration, Functions.

It is examined at some proposals the problem of two celestial bodies, whose masses grow thanks to the cosmic cloud which is in statistical equilibration to the coordinates of Galilai's system. It is proved that necessary condition of turning relative radius-vector in infinity is existence and equality to nought of limit of function

$$f(t) = \frac{m_1 m_2}{m_1 + m_2} \frac{d}{dt} \frac{m_1^2 m_2^2}{m_1 + m_2},$$

when t [illegible]. Here m_1 and m_2 — masses of shown bodies. (Author)

Pikel'ner, Solomon Borisovich.
SOVIET SCIENCE OF INTERSTELLAR SPACE, tr. by Mary Zirin. 1963, 230p.
Order from Philosophical Publishing Co., Beverly Hall, Quakertown, Pa., $7.50

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: Reports, Scientific research, Astrophysics, *Interstellar matter, Nebulae, Cosmic rays.

Sobolev, Viktor Viktorovich.
A TREATISE ON RADIATIVE TRANSFER, tr. by S. I. Gaposchkin. 1963, 319p.
Order from D. Van Nostrand Co., 120 Alexander St., Princeton, N. J. $9.75

Trans. of mono. [Perenos Luchistoi Energii v Atmosferakh Zvezd i Planet, Moscow, 1956, 391p.].
A trans. of p. 382-384 is available from OTS or SLA as 62-10180 [1961] [37]p. and from OTS $3.60 as AD-264 164, Mar 61, 36p.

DESCRIPTORS: *Light, *Monochromatic light, *Scattering, Reflection, Optics, Planetary atmospheres, Transport properties, Venus, Earth, Atmosphere, Planets, Sky brightness, Sea water, *Astrophysics, *Stars, Light transmission

Yarov-Yarovoi, M. S.
ON THE CONVERGENCE IN THE EXPANSION OF THE FORCING FUNCTION OF THE ATTRACTION OF TWO BODIES. [1962] 4p. 1 ref.
Order from OTS or SLA $1.10 63-10375

Trans. of Moscow U. Vestnik. [Seriya Matematiki, Mekhanika, Astronomii, Fizik, Khimii] (USSR) 1958 [v. 13] no. 5, p. 63-65.

DESCRIPTORS: *Celestial mechanics, *Functions, *Series, *Inertia, *Euler's angles, Vector analysis, Differential equations, Equations of motion.

Yarov-Yarovoi, M. S.
ON THE EXPANSION OF THE FORCING FUNCTION OF THE NEWTONEAN ATTRACTION OF TWO BODIES. [1962] 11p. 3 refs.
Order from OTS or SLA $1.60 63-10376

Trans. of Moscow U. Vestnik. [Seriya Matematiki, Mekhanika, Astronomii, Fiziki, Khimii] (USSR) 1958 [v. 13] no. 5, p. 55-61.

DESCRIPTORS: *Celestial mechanics, *Inertia, *Functions, *Euler's angles, Equations, Series, Equations of motion.

Yarov-Yarovoi, M. S.
ON THE EXPANSION OF THE FORCING FUNCTION OF THE TWO-BODY-ATTRACTION WITH RESPECT TO THE MOMENTS OF INERTIA FOR THE NON-MAJOR AND NON-CENTRAL AXES OF INERTIA. [1962] 10p. 4 refs.
Order from OTS or SLA $1.10 63-10492

Trans. of Moscow U. Vestnik. [Seriya Matematiki, Mekhanika, Astronomii, Fiziki, Khimii] (USSR) 1959 [v. 14] no. 3, p. 55-62.

DESCRIPTORS: *Inertia, *Euler's angles, *Celestial mechanics, Equations, Functional analysis, Series, Equations of motion, *Functions.

Yarov-Yarovoi, M. S.
ON THE INITIAL MEMBERS IN THE EXPANSION OF THE FORCING FUNCTION OF THE ATTRACTION OF TWO BODIES. [1962] 8p. 3 refs.
Order from OTS or SLA $1.10 63-10374

Trans. of Moscow U. Vestnik. [Seriya Matematiki, Mekhanika, Astronomii, Fiziki, Khimii] (USSR) 1958 [v. 13] no. 6, p. 39-44.

DESCRIPTORS: *Celestial mechanics, *Inertia, *Functions, Equations, *Series, Euler's angles, Equations of motion.

BEHAVIORAL SCIENCES

BIOGRAPHIES OF SOVIET SCIENTISTS. 29 Apr 63, 38p. JPRS: 18951.
Order from OTS $1.25 63-21703

Trans. of 18 selected biographical articles from Russian periodicals.

DESCRIPTORS: *Biographies, *Scientific personnel, Medical personnel, Personnel

Contents: L. I. Andzhaparidze; O. A. Baikonurov; Yu. A. Chernikov; I. B. Galant, S. A. Gilyarevskii; A. A. Itskovich, G. I. Mirzabekyan; O. G. Plisan; S. A. Poplavskii; P. F. Samsonov; A. A. Said-Akhmedov; B. M. Sosina; I. V. Tsimbler; Ya. V. Bykov; L. A. Vulis, I. V. Egyazarov; E. I. Zhukovskii; Nominations for positions of Academician and Corresponding Member, Academy of Sciences Armenian SSR.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 132 (BIOLOGY AND MEDICINE SERIES). 16 Apr 63 [22]p. JPRS: 18718.
Order from OTS $0.50 63-21579

Consists of Abstracts of articles from the scientific and technical journals of Czechoslovakia and Poland.

DESCRIPTORS: *Abstracts, Bibliography, *Biology, *Medicine, *Diseases, Therapy, *Biochemistry, Physiology, *Drugs, Pediatrics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 137 (BIOLOGY AND MEDICINE SERIES). 17 Apr 63 [17]p. JPRS: 18753.
Order from OTS $0.50 63-21597

Consists of abstracts of articles from the scientific and technical journals of Rumania.

DESCRIPTORS: *Abstracts, *Biology, *Medicine, Bibliography, *Plants (Botany), Diseases, *Agriculture, *Veterinary medicine, Immunology, Genetics.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 139 (BIOLOGY AND MEDICINE SERIES). 17 Apr 63 [50]p. JPRS: 18765.
Order from OTS $1.25 63-21603

Consists of abstracts of articles from the scientific and technical journals of Poland.

DESCRIPTORS: *Abstracts, Bibliography, *Biology, *Medicine, *Pharmacology, Drugs, Chemical analysis, Plants (Botany), *Pathology, *Surgery, Therapy, *Gynecology, *Immunology, *Epidemiology.

FIRST GROUP FLIGHT IN COSMIC SPACE IN THE WORLD (FUNDAMENTAL OUTLINES). [1962] 33p.
Order from OTS or SLA $3.60 63-10130

Trans. from Pravda [Moscow] (USSR) 1962, no. 295(16151) 22 Oct.

DESCRIPTORS: *Space flight, *Space biology, Space medicine, *Closed-cycle ecological systems, Space environmental conditions, Astronauts, Space communication systems, Telemetry, Television communication systems, Radio communication systems, Radiation hazards, Cosmic rays, Weightlessness.

electric power station, by N. A. Nikitina and I. L. Kulik
Effect of blue-green algae on the development of zooplankton, by E. F. Manuylova.

LAND AND MARINE ECOLOGY: [SELECTED] TRANSLATIONS. 3 Apr 63 [54]p. 104 refs. JPRS: 18517.
Order from OTS $1.50 63-21488

Trans. of Moskovskoe Obshchestvo Ispytatelei Prirody Byulleten' Otdel Biologicheskii (USSR) 1962, v. [37]67, no. 1, p. 15-22, 34-58, 128-131.

DESCRIPTORS: Ecology, *Plants, *Climatology, Man, Distribution, *Mammals, Hydroelectric power systems, *Algae, *Plankton, *Marine biology.

Andryashve, A. P.
A FISH NEW TO THE FAUNA OF THE USSR: ERILEPIS (ERILEPIS ZONIFER (LOCK.) PISCES, ANOPLOPOMIDAE) FROM THE KAMCHATKAN WATERS OF THE PACIFIC OCEAN, tr. by Laurence Penny. [1962] [6]p. 27 refs.
Order from OTS or SLA $1.10 63-15237

Trans. of Voprosy Ikhtiologii (USSR) 1955, no. 4, p. 3-9.

DESCRIPTORS: *Fishes, *Pacific Ocean, Taxonomy, *Cod, Marine biology.

Milenkov, S.
SCIENTIFIC CONFERENCE ON THE PROBLEM OF THE STRUCTURE AND FUNCTION OF THE NERVOUS SYSTEM [MOSCOW, 10-14 DEC 60]. [1962] 6p.
Order from OTS or SLA $1.10 63-10175

Trans. of Zdravookhranenie Belorussii (USSR) 1961 [v. 7] no. 3, p. 69-71.

DESCRIPTORS: *Conferences, Anatomy, Physiology, *Nervous system, Neurology.

Sheng, Shan-tung, Hung, Mon-miang and others.
THE ROLE OF RIBOSE NUCLEIC ACIDS IN BACTERIAL MUTAGENESIS. [1962] 9p. 13 refs.
Order from OTS or SLA $1.10 62-14830

Trans. of [K'o Hsueh T'ung Pao] (Chinese People's Republic) 1960, p. 491-494.

DESCRIPTORS: Biochemistry, Physiology, Nucleic acids, *Ribonucleic acids, Ribose, *Mutations, Genetics, Etiology, *Bacillus subtilus, Penicillin, Bacteria.

Results show that: (1) The resistance of Bacillus subtilis to penicillin can be destroyed by ribonuclease and not desoxyribonuclease. (2) Ribonucleic acid, (RNA), extracted from bacteria with the mutagenic factor retains the mutagenic activity. (3) RNA extracted from bacteria which were treated with the mutagenic factor and acquired resistance to penicillin retained the resistance in its molecule. This proves that in Bacillus subtilis, RNA is the mutagenic factor for resistance to penicillin.

In addition to Desoxyribonucleic acid, (DNA), RNA is equally important, in bacterial genetic action. DNA and RNA are independent in action. This might also apply in other bacteria or more complex organisms. (Author)

Vyazov, O. E., and Sazhina, M. V.
IMMUNO-BIOLOGICAL STUDY OF THE PROCESS OF LENS REGENERATION IN TRITON TAENIATUS (Immuno-Biologicheskoe Izuchenie Protsessa Regeneratsii Khrustalika u Tritona (Triton Taeniatus)). [1962] 15p. 21 refs. Trans. A-1373.
Order from OTS or SLA $1.60 63-13023

Trans. of Zhurnal Obshchei Biologii (USSR) 1961, v. 22 no. 4, p. 305-310.

DESCRIPTORS: Immunity, Biology, *Crystalline lens, *Regeneration, *Antigens and antibodies, Snails.

Anatomy and Physiology

STUDIES IN BIOLOGICAL SCIENCES 17 Apr 63 [22]p. 16 refs. JPRS: 18760.
Order from OTS $0.75 63-21600

Trans. of Nauchnye Doklady Vysshei Shkoly. Biologicheskie Nauki (USSR) 1963, no. 1, p. 68-71 and 96-99.

DESCRIPTORS: Biology, Proteins, Liver, *Radiolysis, Radiation effects, Bioelectronics, *Muscles, Stimulation, Neuromuscular transmission, *Exercise.

Contents:
On the mechanism of disturbance of autolysis of proteins in the liver of irradiated rats, by Yu. B. Kudryashov and others
Change in the bio-currents of muscles under the influence of stimulants of the first and second signal systems during human muscular activity, by E. V. Stefanovich.

Cier, J.-F.
PERFUSION OF THE DOG HEART IN SITU UNDER CONSTANT OUTPUT: TECHNIQUE OF INVESTIGATION OF CORONARY CIRCULATION (La Perfusion Sous Débit Constant du Coeur de Chien in Situ. Technique d'Exploration de la Circulation coronaire). [1962] 4p. 3 refs.
Order from SLA $1.10 63-10072

Trans. of Soc[iéte de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1962, v. 156, p. 670-672.

DESCRIPTORS: *Perfusion, *Heart, Dogs, Blood circulation, Laboratory equipment.

Gandel'sman, A. B. and Prokopovich, N. B.
PERFECTION OF INTEROCEPTIVE ANALYSIS DURING ACUTE HYPOXEMIA AND HYPERCAPNIA IN MAN. 20 Feb 63 [13]p. 14 refs. FTD-TT-62-1903.
Order from OTS or SLA $1.60 63-19092

Unedited rough draft trans. of #Zhurnal Vysshei Nervnoi Deyatel'nosti (USSR) 1962, v. 12, no. 2, p. 223-228.

DESCRIPTORS: *Analyzers (Psychology), Man, Adaptation (Physiology), *Hypoxia, *Hypercapnia, *Exercise, Training, Physical fitness, Chemorecptors, Motor reactions, Perception, Conditioned reflex, *Senory mechanisms.

During athletic training the interoceptive analysor is perfected together with the motor analysor. Athletic training can lead to a high degree of perfection of the interoceptive (chemoreceptive-vasal) analysor with a differentiated evaluation by the test subject of a change in the gaseous composition of the blood and a high accuracy of the second signal characteristic of the shift. Under experimental conditions, it was possible to improve interoceptive analysis without motor training. In this case, training consisted of teaching the test subject the fine perception of the change in the gaseous composition of the blood at rest while breathing in a closed space. Perfection of the interoceptive analysor is evidently an important condition for conscious rational distribution (self-regulation) of vital loads in man and for preventing their overstrain. (Author)

Heger, Paul.
CARL FREDRICH WILHELM LUDWIG. [1962] 10p. (refs. omitted) 4 refs.
Order from SLA $1.10 62-20174

Trans. of mono. Dictionnaire de Physiologie (Physiological Dictionary) [ed. by] Charles Richet, Paris, 1928, v. 10, p. 267-276.

DESCRIPTORS: *Physiology, Anatomy, Kymography, *Medical personnel, Biographies.

Kedrov, A. A. and Naumenko, A. I.
THE MECHANISM OF INTRACRANIAL CIRCULATION (O Mekhanizme Vnutricherepnogo Krovoobrashcheniya). Apr 63 [27]p. 8 refs. NASA Technical Trans. F-159; N63-14316.
Order from OTS $0.75 63-11605

Trans. of Uspekhi Sovremennoi Biologii (USSR) 1954, v. 38, no. 2, p. 183-198.

DESCRIPTORS: *Brain, *Blood circulation, Cardiovascular system, Bioelectronics, *Plethysmography, Electrodes, High frequency, Alternating current, Blood pressure, Blood volume, Cerebrospinal fluid.

Short-term experiments on cats and dogs were carried out by making use of the method of electroplethysmography. Two small platinum electrodes were embedded in the cranial cavity of the animal, and a high-frequency alternating current was passed through the structures lying between the electrodes after hermetic conditions were restored. (NASA Abstract)

Naumenko, A. I.
PRESSURE FLUCTUATIONS IN THE HERMETRIC CAVITY (O Kolebaniyakh Davleniya v Germeticheski Zakrytoi Cherepa). Apr 63 [16]p. 11 refs. NASA Technical Trans. F-162; N63-14432.
Order from OTS $0.50 63-11608

Trans. of Fiziologicheskii Zhurnal SSSR, 1956, v. 42, no. 8, p. 660-667.

DESCRIPTORS: Pressure, *Brain, *Arteries, Respiration, Relaxation (Physiology), Muscles, Carbon dioxide, Blood volume, Cardiovascular system, Piezoelectric crystals

In the closed cranial cavity intracranial pressure is characterized by constant pulse and respiratory fluctuations. The pulse fluctuations are caused by rhythmical dilation of the intracranial arteries. When an animal is in repose, pulse fluctuations do not exceed 1 to 2 mm H_2O due to an increase in arterial pulsations associated with reduced tonus of the arterial wall influenced by increased carbon dioxide in the blood. The increase in the volume of the arteries during cardiac systole and the ensuing increase in intracranial pressure are easily compensated by periodic accelerations of the outflow of venous blood and corresponding decreases in the volume of the cerebral veins. (NASA abstract)

Pyasetskaya, G.
REVIEW OF THE FORCES OF PARACHUTISTS.
5 Feb 63 [12]p. (illus. omitted). FTD-TT-62-1700.
Order from OTS or SLA $1.60 63-15781

Unedited rough draft trans. of Kryl'ya Rodiny (USSR) 1961 [v. 12] no. 10, p. 9-11.

DESCRIPTORS: *Parachute jumping, *Physical fitness, Recreation, Personnel.

Vedyaev, F. P.
THE ROLE OF FUNCTIONAL-STATE PARAMETERS IN THE PRODUCTION OF REACTIONS OF SUBCORTICAL ORIGIN. [1962] [20]p. 22 refs. FASEB manuscript no. S 264-2.
Order from OTS or SLA $1.60 63-19017

Trans. of #Fiziologicheskii Zhurnal SSSR, 1962, v. 48, no. 8, p. 942-952.

DESCRIPTORS: Reaction (Psychology), *Cerebral cortex, *Brain, *Nervous systems, Nerves, Autonomic nervous system, *Reflexes, Stimulation, Electrodes, Test methods, *Neuromuscular transmission, Adaptation (Physiology), *Motor reactions.

When various subcortical structures are stimulated, three types of reactions are seen: conducting-fiber reactions, highly complex unconditioned reactions, and postural tone reactions. Their appearance is determined in all probability, not only by a difference in neural structures (electrode localization), but also by a functional interaction of centers--i.e., a constellation of the centers (in Ukhtomskii's terminology). Excitation developing in some structures spreads over reflex arcs of the same functional type and eventually determines the integral character of the reaction. Differences in the functional characteristics of subcortical structures underlie the inexhaustible plasticity of the CNS. The data obtained show that subcortical structures have a great diversity of functional characteristics. Consequently, in analyzing cortico-subcortical interrelationships one must not only structurally define the reflex arc but also take into account the role of parameters of the functional state of the central nervous structures. (Author

Yuganov, E. M., Kas'yan, I. I., and Yazdovskii, V. I.
MUSCLE TONUS UNDER CONDITIONS OF WEIGHTLESSNESS (O Myshechnom Tonuse v Usloviyakh Nevesomosti). Mar 63, [10]p. 5 refs. NASA Technical Trans. F-131; N63-13223.
Order from OTS $0.50 63-11599

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1960 [v. 25] no. 4, p. 601-606.

DESCRIPTORS: *Muscles, *Eye, Gravity, *Weightlessness, Rabbits, Reflexes, *Space biology

An experiment was carried out to study the nature and degree of change in tonus of a rabbit's eye muscles under conditions of the intermittent action of increased gravity and weightlessness. (NASA abstract)

Biochemistry

Epstein, M. M. and Khilko, O. K.
THE EFFECT OF α-PINENE ON CARBON DIOXIDE PHOSPHORUS-METABOLISM. [1962] [7]p. 15 refs.
Order from OTS or SLA $1.10 63-10170

Partial trans. (tables, figs. refs. conclusion only) of Ukr[ayins'kyi] Biokh[imichnyi] Zhurn[al] (USSR) 1960, v. 32, no. 5, p. 710-715.

DESCRIPTORS: Toxicity, *Heptenes, *Carbon dioxide, Phosphorus, *Metabolism, Glycogen, Liver, Muscles, Brain, *Oxygen consumption, *Phosphorylation, Adenosine phosphates, Biochemistry.

Prolonged administration of α-pinene (70 to 80 days) leads to an increase in the amount of glycogen in liver tissue of animals (an average increase of 21%) and in the skeletal muscles of rats (an average increase of 131%). No marked differences in quantity of glycogen in brain tissue were observed between experimental and control animals. The sucrose level in the blood of experimental animals was found to be within normal limits. α-pinene in experimental animals both in vitro and in vivo lowers the activity of phosphorilase and of adenosintriphosphate of liver and skeletal muscles in rabbits and rats. The relative position? of adenosintriphosphoric acid in the skeletal muscles of experimental rats - in comparison with that of control animals --does not change (as a result of experimental conditions). α- pinene in experiments in vitro and in vivo has no effect on the intensity of oxygen consumption in the liver tissue of rats, and apparently depresses the binding of inorganic phosphorus, which obviously, testifies as to the lack of connection between the processes of phosphorilation and respiration. (Author)

Lieberman, L. L., Dmitrenko, L. V., and Yaroshevskii, Yu. A.
ISOLATION OF INSULIN-LIKE COMPOUNDS FROM BLOOD PLASMA AND URINE ON ION-EXCHANGE RESINS. [1962] 4p. (refs. omitted).
Order from OTS or SLA $1.10 63-10209

Trans. of Vopr[osy] Med[itsinskoi] Khim[ii] (USSR) 1962, v. 8, no. 4, p. 420-423.

DESCRIPTORS: *Insulin, Separation, Blood plasma, Urine, *Ion exchange resins, Adsorption, Test methods.

The cation exchange resin SDV-3 in hydrogen form, with a swelling coefficient 3.3-3.5 and 60-80 mesh, completely adsorb compounds from blood plasma, and compound (or compounds) from urine which have insulin-like activity. This compound (or compounds) can be quantitatively eluted from the resin with a solution of sodium carbonate. By passing a solution of insulin through the resin containing 0.1-0.005 units/ml., the insulin remains quantitatively in the eluate. The method of insulin adsorption from blood and urine is described. (Author)

CHANGE IN THE CONTENT AND STATE OF COPPER IN THE BRAIN TISSUE AND BLOOD DURING EXCITATION AND INHIBITION OF THE CENTRAL NERVOUS SYSTEM. [1962] [3]p.
Order from OTS or SLA $1.10 63-10171

Partial trans. (One table two figs. only) of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1960, v. 32, no. 5, p. 718-724.

DESCRIPTORS: *Copper, *Brain, Tissues (Biology), *Blood, *Stimulation, *Inhibition, Nervous system, Spinal cord, Biochemistry.

Peterburgskii, A. V. and Nelyubova, G. L.
THE PROBLEM OF DETERMINING THE ANION EXCHANGE CAPACITY OF PLANT ROOTS (K Voprosu ob Opredelenii Anionoobmennoi Poglotitelnoi Sposobnosti Kornei Rastenii). Nov 62 [5]p. 6 refs. RTS 2197.
Order from OTS or SLA $1.10 63-15243

Trans. of [Moskovskaya Sel'skokhozyaistvennaya Akademiya]. Doklady (USSR) 1961, v. 70, p. 107-110.

DESCRIPTORS: *Ion exchange, *Plants, Exchange reactions, *Absorption, Nutrition, *Soils, Biochemistry, Colorimetry.

Polyakova, N. M., Belik, Y. V., and Tsaryuk, L. A.
PROTEINASE IN FUNCTIONALLY DIFFERENT DIVISIONS OF THE CENTRAL NERVOUS SYSTEM AND IN VARIOUS STRUCTURAL ELEMENTS OF THE BRAIN CELLS. [1962] [8]p.
Order from OTS or SLA $1.10 63-10173

Partial trans. (table only) of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1960, v. 32, no. 5, p. 623-634.

DESCRIPTORS: *Peptide hydrolases, *Nervous system, *Brain, *Spinal cord, *Cells (Biology), Cerebral cortex, Cerebellum, Microsomes, Biochemistry.

Seregina, L. M.
ON ALTERATIONS IN THE CARBOHYDRATE METABOLISM IN RATS DUE TO DIFFERENT DOSES OF INSULIN. [1962] [6]p.
Order from OTS or SLA $1.10 63-10172

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1961, v. 33, no. 4, p. 563-568.

DESCRIPTORS: *Carbohydrates, *Metabolism, Rats, Dosage, *Insulin, Hormones, Drugs, *Shock (Pathology), Brain, Blood, Blood chemistry, Lactic acid, Glycogen, Organic acids.

Serenkov, G. P., and Vladychenskaya, N. S.
STUDY OF NUCLEIC ACIDS IN SOME ALGAL SPECIES (Izuchenie Nukleinovykh Kislot Nekotorykh Vidov Vodoroslei). 26 Nov 62, 13p. 11 refs. Trans. A-1378.
Order from OTS or SLA $1.60 63-13231

Trans. of Nauchnye Doklady Vysshei Shkoly. Biologicheskie Nauki (USSR) 1962, no. 2, p. 147-151.

DESCRIPTORS: *Nucleic acids, *Algae, *Nucleotides, Molecular structure, Taxonomy, Desoxyribonucleic acids, *Genetics.

The results obtained by us permit assuming that with the appearance of multicellularity, and of high morphological differentiation in the limits of the type of green algae the nucleotide make-up of their desoxyribonucleic acid, (DNA), changes also. This change proceeds along the line of decrease of contents of guanylic and cytidylic contents and increase of adenylic and thymidylic nucleotides. Because of this DNA gradually is converted from the high GC-type (unicellular algae) first to the low GC-type, and then through the equimolecular ratios of nucleotides - to the opposite AT-type (highly organized algae from the class Charophyceae). According to the composition of DNA the highly organized green algae approach the high plants, DNA of which belongs to the AT-type. (Author)

Udintsev, N. A.
EFFECT OF GLUTAMIC ACID ON THE ACTIVITY OF CERTAIN TISSUE ENZYMES UNDER THE CONDITION OF HYPOXIA AND PHYSICAL EFFORT. [1962] [11]p. 24 refs.
Order from OTS or SLA $1.60 63-10174

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1960, v. 32, no. 6, [p. 857-866].

DESCRIPTORS: *Glutamic acid, Tissues (Biology), Enzymes, *Hypoxia, *Exercise, Hydrolases, Oxidoreductases, Cytochrome oxidase, Biochemistry.

The injection of glutamic acid under conditions of hypoxia intensifies the activity of some enzymes associated with tissue respiration, namely cytochromoxidase, glutamicodehydrogenase, and lacticodehydrogenase. In physical effort of short duration (three-minute swiming) glutamic acid has no effect on the activity of the respiratory enzymes we studied. Glutamic acid injected into rats in the endurance experiment, involving continuous swiming over a period of one hour, brought about an intensification of the activity of glutamicodehydrogenase, lacticodehydrogenase. Apparently there was no such effect on the activity of cytochromoxidase. (Author)

Pashkov, G. D.
ON THE MORPHOLOGICAL NATURE OF THE COLEORHIZAE OF GRASSES. [1962] 29p. 14 refs.
Order from OTS or SLA $2.60 AEC-tr-5012

Trans. of Botanicheskii Zhurnal (USSR) 1951, v. 36, no. 6, p. 597-606.

DESCRIPTORS: *Morphology, Plants (Botany), *Grasses, Seeds, Growth.

The coleorhiza displays certain morphological and partly functional features of a root during the germination of the seed; in seedlings, the coleorhiza is strongly elongated. It is usually covered with living root hairs which are viable for a long time, and that part of it which corresponds to the apex of a normally developed root never carries root hairs and consists of cells different from the rest of the overlying layer of the coleorhiza. The embryonic root is apparently a lateral root in terms of origin; it develops endogenously inside the main and truly seed (axial) root--the coleorhiza. The lateral seed root, incorrectly called the main root, is established in grasses very early. During the germination of the grain, this embryonic root assumes the function of the main root in the first days of the existence of the seedling. (Author)

Smirnova, A. D.
ON THE PROBLEM REGARDING THE PHYSIOLOGICAL ROLE OF MYCORHIZA. [1962] 8p. 14 refs.
Order from OTS or SLA $1.10 62-20265

Trans. of [Saratov U. Uchenye Zapiski] (USSR) 1959, v. 64 [p. 135-138].

DESCRIPTORS: Physiology, *Fungi, Plants (Botany), *Trees, Growth, Mycology.

The study that has been carried out makes it possible to draw the following generalized conclusion. An oak (tree), under definite conditions of cultivation, can grow fairly well without the formation of mycorhiza. However, under the same conditions, the presence, in it, of mycorhiza, enhances its possibilities of utilizing nutritive substances in the soil and water, increases its vital activity and, in the long run, leads to an intensification of growth. (Author)

Zhukovskii, P. M.
MODERN METHODS OF PLANT BREEDING (Sovremennye Metody Selektsii Rastenii). 28 Nov 62, 23p. (figs. omitted). Trans. A-1358.
Order from OTS or SLA $2.60 63-13413

Trans. of Priroda (USSR) 1962, v. 51, no. 5, p. 52-60.

DESCRIPTORS: *Plants (Botany), *Reproduction, *Mutations, Wheat, Tobacco, *Polyploidy, Sex, Seeds, *Genetics, Biochemical genetics, Botany.

SOVIET ECOLOGICAL STUDIES. 18 Apr 63 [100]p. 83 refs. JPRS: 18778.
Order from OTS $2.25 63-21609

Trans. of Zoologicheskii Zhurnal (USSR) 1963, v. 42, no. 2, p. 161-196 and 256-267.

DESCRIPTORS: *Ecology, Theory, Plants (Botany), Animals, *Benthos, Mollusca, Crustacea, Worms, Population, Distribution, *Fishes, *Eggs, Production, Caspian Sea.

Contents:
Biocenosis: a basic concept of ecology, by K. V. Arnol'di and L. V. Arnol'di
Benthos of the Northern Caspian Sea under conditions of regulated flow in the Volga, by V. F. Osadchikh
The reason for variable quality roe of certain fish, by N.V. Lebedev and Chzhen Chzhen'dyun.

Troshin, A. S. and Zhinkin, L. N.
RESEARCH ON THE MITOTIC DIVISION OF CELLS. 4 Jan 62 [6]p. JPRS: 11836.
Order from OTS or SLA $1.10 63-15929

Trans. from Akademiya Nauk SSSR. Vestnik, 1961, v. 31, no. 10 [p. 134-135].

DESCRIPTORS: *Cells (Biology), *Mitosis, Histology, Reproduction (Physiology), Pathology, Regeneration, Hormones

A summary of papers presented at the All-Union conference on mitosis, Leningrad, 1-3 June 1961.

Medical Specialties and Equipment

Dashevskii, M. I.
ULTRAMICROTOME UMD-5 (Ul'tramikrotom UMD-5). 16 Oct 62, 7p. (figs. omitted). Trans. A-1359.
Order from OTS or SLA $1.10 63-13029

Trans. of Priroda (USSR) 1962, v. 51, no. 5, p. 104-107.

DESCRIPTORS: *Microtomes, *Electron microscopy, Microphotography, Histology, Histological sections, Laboratory equipment.

Kharkevich, D. and Novikov, Yu.
RELAXANTS [AND] RESPIRATORS. 21 Mar 63 [15]p. 10 refs. JPRS: 18261.
Order from OTS $0.50 63-21378

Trans. of Bol'shaya Meditsinskaya Entsiklopediya (USSR) 1962, v. 28, p. 235-238 and 452-456.

DESCRIPTORS: *Drugs, *Skeletal muscle relaxants, Curare alkaloids, Myanesin, *Oxygen masks, *Gas masks, *Respiration.

Molins, J. N.
ELECTRIC ANESTHESIA. Paper presented at the Hispano-American Odontological Congress (no. 1) Seville, May 53, [1962] [6]p.
Order from SLA $1.10 62-20212

Trans. of Anales Españoles de Odontoestomatologia (Spain) 1953, v. 12, p. 597-600.

DESCRIPTORS: Anesthesia, *Anesthetics, Denistry, Pain, *Electrotherapy, Radiationtherapy, Ultraviolet radiation, Ultrasonic radiation, Electric currents, High frequency, Low frequency, *Dental surgery.

Nazarov, I. L.
EXAMINATION OF HEALTHY SUBJECTS BY THE ULTRALOW-FREQUENCY BALLISTOCARDIOGRAPH METHOD. [1962] [26]p. 18 refs. FASEB manuscript no. S 74-2.
Order from OTS or SLA $2.60 63-15128

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 4, p. 36-46.
Another trans. is available from OTS or SLA as 62-25607, JPRS-14395, 6 July 62 [17]p.

DESCRIPTORS: *Ballistocardiography, Low frequency, Medical equipment, Diagnosis, Heart, Diseases, Medical examination.

Vainberg, Z. S.
PRESENT STATUS OF THE "ARTIFICIAL KIDNEY" [1962] [21]p. 54 refs. NIH-192.
Order from OTS or SLA $2.60 62-23544

Trans. of Urologiya (USSR) 1955 [v. 20] no. 4, p. 68-76.

DESCRIPTORS: *Artificial kidney, Physiology, Kidneys, Urine, Excretion, Therapy, *Nephritis, *Shock (Pathology), Mechanical organs.

Microbiology

Fikhman, B. A.
PLASTIC STANDARDS OF TURBIDITY FOR OPTICAL STANDARDIZATION OF BACTERIAL SUSPENSIONS (Plastmassovye Standarty Mutnosti dlya Opticheskoi Standartizatsii Bakteriinykh Vzvesei). 31 Dec 62, 3p. 8 refs. NIH no. 12-22-62.
Order from OTS or SLA $1.10 63-15576

Trans. of Laboratornoe Delo (USSR) 1962, v. 8, no. 4, p. 52-54.

DESCRIPTORS: Standards, Plastics, *Culture media, Bacteria, Solutions, Glass, *Optical plastics, Acrylic resins, Styrene plastics, Laboratory equipment.

For the purpose of elaborating solid standard of turbidity, different polymerized synthetic resins and fillers were used. The investigators worked out a simple method of preparing plastic standards of turbidity on a base of methyl methacrylate, known for the transparent and lightproof quality of its polymers, and polystyrene. Block polymerization of this mixture, carried out under the effect of heat and in the presence of a catalyst (benzoyl peroxide), permits obtaining uniform blocks of a fixed turbidity. (Author)

Krauter, Dieter.
EXPERIMENTING WITH THE MICROSCOPE. 1963, 224p.
Order from Sterling Publishing Co., Inc., 210 Ellicott St., Buffalo, 3, N. Y. $4.95

Trans. of unidentified German language mono., n. p., n. d.

DESCRIPTORS: *Microscopy, Microscopes, Microanalysis, Biology, Microorganisms

Kuznetsova, V. A. and Pantskhava, E. S.
EFFECT OF FRESHENING STRATA WATERS ON THE DEVELOPMENT OF HALOPHILE SULFATE-REDUCING BACTERIA. 12 Apr 63 [10]p. 10 refs. JPRS: 18682.
Order from OTS $0.50 63-21568

Trans. of #Mikrobiologiya (USSR) 1962, v. 31, no. 1, p. 129-134.

DESCRIPTORS: Water injection, Microorganisms, Soils, Salinity, *Bacteria, *Sulfates, Water, *Oxidation-reduction reactions, Stratigraphy, Petroleum, Sources, Paleoecology.

Highly mineralized strata water from Devonian deposits of the Volga-Ural oil region possess bacteriostatic properties. Laboratory experiments carried out with strata water from the Kalinovskoye oil field and the Zol'nyy Ovrag field demonstrated that dilution with fresh water stimulates the activity of sulfate-reducing bacteria. The development of these bacteria in strata water from the KC is stimulated by small doses of fresh water. For initiating the process of sulfate reduction in Devonian waters it is necessary to dilute them with fresh water three-fold and more. Similar results were obtained in experiments with artificial media. The degree of dilution of strata water with fresh water in the process of operating oil fields should constitute one of the primary factors influencing the bacterial process of sulfate reduction under stratum conditions. (Author)

Meshcheryakov, A. Ya.
EXPERIMENTAL OBTAINING OF HIGHLY SPECIES-SPECIFIC PRECIPITATIVE ANTHRAX SERA (Opyt Polucheniya Vysokospetsifichnoi Pretsipitiruyushchei Sibireyazvennoi Syvorotki). 21 Nov 62, 26p. 33 refs. Trans. V-1803.
Order from OTS or SLA $2.60 63-13411

Trans. of Vsesoyuznyi Institut Eksperimental'noi Veterinarii. Trudy (USSR) 1961, v. 25, p. 384-398.

DESCRIPTORS: *Bacillus anthracis, *Serum, *Complement, Indentification, *Antigens and antibodies, Spores, Bacteria, Aerobiology.

Wendel, Kurt.
THE PROBLEM OF INCREASED METABOLISM AND ACID ACTIVITY IN ASPERGILLUS NIGER AS FUNCTION OF CULTURE AND SUBSTRATE CONDITIONS. II. THE EFFECT OF ALTERNATING CURRENT ON CITRIC ACID BIOSYNTHESIS (Zur Frage der Stoffwechselsteigerung und Säuerung bei Asperquillus Niger in Abhängigkeit von Zlichtungs- und Substratbedingungen). [1962] 7p. (figs. omitted) 8 refs.
Order from SLA $1.10 63-10533

Trans. of Zentralblatt f[ür] Bakteriologie [Parasitenkunde und Infektionskrankheiten. Abt.] 2 (East Germany) 1957, v. 110, p. 612-617.

DESCRIPTORS: Metabolism, Organic acids, Plants (Botany), *Molds (Organisms), Culture media, *Alternating current, *Citric acids, *Biosynthesis, Biological products, Bioelectronics, Biophysics, Growth, Spores, Microorganisms.

Pathology

SOVIET CLINICAL MEDICINE: [SELECTED] TRANSLATIONS. 5 Apr 63 [16]p. JPRS: 18577.
Order from OTS $0.50 63-21520

Trans. of Zdravookhranenie Turkmenistana (USSR) 1963 [v. 7] no. 1, p. 3-11.

DESCRIPTORS: Medicine, Adaptation (Physiology), *Thrombosis, *Heart, Blood vessels, Blood pressure, Climatic factors, *Anomalies, Embryos, Age, *Etiology.

Contents:
Changes in the hemodynamics of patients suffering from myocardial infraction in the climatic conditions of Ashkhabad, by S. A. Radyukova
Clinico-anatomical characteristics of congenital developmental defects, by S. E. Gleiberman.

STUDIES ON BURN INJURY. 15 Apr 63 [20]p. 32 refs. JPRS: 18700.
Order from OTS $0.50 63-21575

Trans. of Terapevticheskii Arkhiv (USSR) 1963 [v. 35] no. 1, p. 84-94.

DESCRIPTORS: *Burns, Wounds and injuries, Pathology, Morphology, *Thyroid gland, *Aging (Physiology).

Contents:
Changes in the function of the thyroid gland with burn injury, by G. A. Trofimov
Pathomorphological peculiarities of burn injury in the aged, by V. M. Pinchuk.

VIBRATION DISEASE AND THERMAL DEHYDRATION [SELECTED] TRANSLATIONS. 5 Apr 63 [24]p. 41 refs. JPRS: 18576.
Order from OTS $0.75 63-21519

Trans. of Gigiena Truda i Professional'nye Zabolevaniya (USSR) 1963 [v. 7] no. 1, p. 4-13 and 36-41.

DESCRIPTORS: *Vibration, *Diseases, *Heat, *Dehydration, Pathology, Industrial medicine, Etiology, Diagnosis.

Contents:
Materials on the pathogenesis of vibration disease, by E. Ts Andraeva and N. I. Karpova
Application of vibration stimulator for detecting certain functional shifts in workers experiencing vibration effects under industrial conditions, by Z. M. Butkovskaya and Yu. S. Koryukaev
Water and salt exchange in thermal dehydration, by L. Gets.

Chalkina, O. M.
IMMUNOLOGICAL CHANGES IN THE BLOOD OF MEN VACCINATED WITH THE VIRUS OF EPIDEMIC INFLUENZA (Immunologicheskie Izmeneniya v Krovi Lyudei, Vaktsinirovannykh Virusom Epidemicheskogo Grippa). 2 May 62, 9p. 5 refs. NIH no. 5-1-62.
Order from OTS or SLA $1.10 62-25137

Trans. of [Arkhiv Biologicheskikh Nauk] (USSR) 1938, v. 52, no. 1, p. 126-131.

DESCRIPTORS: Immunity, Blood, Man, *Influenza virus, *Immune serums, Toxicity, *Inhalation immunization, Antigens and antibodies, Vaccines.

Inhalation of the finely dispersed influenza virus adapted to mice or ferrets, and carefully prepared by accurate dosage of the infectious material, proved to be a completely harmless method of active immunization with a low reactivity. Subcutaneous injections of the live or killed virus in doses of up to 4 cc of a 1% emulsion of the lungs of mice or ferrets, do not produce a general reaction but only slightly expressed local phenomena. In response to the repeated inhalations of the virus and to subcutaneous injections of the latter, a large part of the vaccinated persons developed protective antibodies which could be detected for several months after vaccination. (Author)

Druckrey, H., Preussmann, R. and others.
CARCINOGENIC EFFECT OF N-METHYL-N-NITROSO-ANILINE. [1962] 2p. 5 refs.
Order from SLA $1.10 63-10353

Trans. of [die] Naturwissenschaften (West Germany) 1961, v. 48, no. 23, p. 722-723.

DESCRIPTORS: *Carcinogenic agents, Methyl radicals, Nitroso radicals, *Anilines, Amines, Phenols, Azo radicals, *Benzaldehydes, Ions, Rats, *Cancer, Etiology, Esophagus.

The investigation as to the carcinogenic effect of the mono-nitroso-amines on rats of different BD strains was done by mixing the substance with a standard diet. The daily dose amounted to 14 mg/kg. After treatment for 250 days, 8 of the 11 surviving animals had tumors of their esophagus. This was recognizable from a

sudden occurrence of a diminution of the body weight, and, in spite of a shift to liquid food, led in a few weeks to death of the animals from starvation. The tumors, usually multiocular and distributed over the entire esophagus, were diagnosed as squamous celled epithelioma. The average carcinogenic total dose came to 3.4 g/kg. Liver tumors were not observed. Because the N-phenyl-N-nitroso-anilin, even with a total dose 20 times greater, still produced no cancer, it may be assumed that the methyl-nitroso-aniline first becomes demethylized, and then there is finally produced from it the phenyl-diazonium ion as the actual carcinogen. Thus alkyl-aryl-nitrosamine appears as a new group of cancer-causing substances that ought to be investigated further. (Author)

Hamburger, J[ean], Richet, G[abriel], and Crosnier, J[ean].
CONTROL OF THE ELECTROLYTIC EQUILIBRIUM. [1961] [47]p.
Order from SLA $4.60 61-10996

Trans. of mono. [Techniques de Réanimation Médicale et de Contrôle de l'Equilibre Humoral en Médecine d'Urgence] (Technics of Medical Reanimation and Control of the Fluid Balance in Emergency Medicine) 2d ed., Paris, 1954, chap. 2, p. 51-95.

DESCRIPTORS: Control, *Body fluids, Acid-base equilibrium, *Electrolytes (Physiology), Cells (Biology) Tissures (Biology), Ions, Acidosis, Buffers, *Metabolism disorders, Sodium, Potassium, Diagnosis, Therapy, Edema, Proteins, Glycosides, *Excretion, *Urinary system, *Nephritis, Diseases, Pathology, Drugs, Food, Potassium compounds, Adrenal glands, Blood proteins.

See also 61-10995

Hamburger [Jean] Richet [Gabriel, and Crosnier, Jean].
CONTROL OF THE EXCRETORY BALANCE. [1962] [111]p. (figs. omitted) 21 refs.
Order from SLA $9.60 62-20226

Trans. of mono. Techniques de Réanimation Médicale et de Contrôle de l'Equilibre Humoral en Médecine d'Urgence (Technics of Medical Reanimation and Control of the Fluid Balance in Emergency Medicine) [2d. ed., Paris, 1954] chap. 3, p. 97-169.

DESCRIPTORS: *Body fluids, Control, Excretion, Acid-base equilibrium, Urine, Toxicity, Stabilization, *Kidneys, Physiology, Diseases, Pathology, Etiology, *Nephritis, Therapy, Diagnosis, *Electrolytes (Physiology), Communicable diseases, Proteins, *Metabolism disorders, Nitrogen, Urea, Glucose, Mechanical organs

See also 61-10996

Hamburger, J[ean], Richet, G[abriel], and Crosnier, J[ean].
CONTROL OF THE RESPIRATION BALANCE. [1961] [75]p.
Order from SLA $7.60 61-10998

Trans. of mono. [Techniques de Réanimation Médicale et de Contrôle de l'Equilibre Humoral en Médecine d'Urgence (Technics of Medical Reanimation and Control of the Fluid Balance in Emergency Medicine) 2d ed., Paris, 1954] chap. 4 [p. 171-220].

DESCRIPTORS: Control, *Respiration, *Respiratory system, Diseases, Pathology, Excretion, *Body fluids, Blood chemistry, Dyspnea, Hypoxia, *Oxygen poisoning, *Hypercapnia, Oxygen, *Metabolism disorders, Osmotic pressure, Electrolytes (Physiology), Blood, Acid-base equilibrium, Carbon dioxide.

See also 62-20226

Hamburger, J[ean], Richet, G[abriel], and Crosnier, J[ean].
TECHNICS OF MEDICAL REANIMATION AND OF CONTROL OF THE FLUID BALANCE IN EMERGENCY MEDICINE: SELECTED PARTS. [1961] [47]p.
Order from SLA $4.60 61-10995

Trans. of mono. [Techniques de Réanimation Médicale et de Contrôle de l'Equilibre en Médecine d'Urgence, 2d ed., Paris, 1954, p. 1-50].

DESCRIPTORS: Control, *Body fluids, *Medicine, Acidosis, Acid-base equilibrium, *Metabolism disorders, Therapy, Osmotic pressure, *Blood proteins, Edema, Ions, Sodium, Diet, *Excretion, Pathology, Urine, *Urinary system, Gastrointestinal system, Diseases, *Electrolytes (Physiology).

Ivanova, S. P.
HEMAGGLUTININ FROM THE WHOOPING COUGH BACILLI. II. CHARACTERISTICS OF HEMAGGLUTININ EXTRACTED FROM WHOOPING COUGH CULTURES. [Nov 62] 5p.
Order from OTS or SLA $1.10 63-10006

Trans. of Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii (USSR) 1955 [v. 26] no. 11, p. 72-77.

DESCRIPTORS: *Hemagglutinins, *Agglutinins, Bacteria, *Whooping cough, Separation, Solvent extraction, Microorganisms, Stability, Agglutination, Erythrocytes, *Bacterial extracts, *Antigen-antibody reactions, Antigens and antibodies, Toxins and antitoxins.

The extraction of the hemagglutinin from the body of whooping cough bacilli is possible by treatment with concentrated solutions of sodium chloride. Isotonic solution of sodium chloride, ethanol, ether and chloroform do not extract hemagglutinin from the bacterial cells. Extracted whooping cough hemagglutinin is completely irresoluble toward the outside influences. In some cases it was possible to see a quick loss in activity, but the previous activity could be established. Under the influence of much powerful factors for denaturalization, as well as by prolonged standing, the hemagglutinin inactivation is irreversible. The salt extracts of whooping cough cultures contain except hemagglutinin, some other, toxic material. The separation of these toxines is possible by the adsorption on erythrocytes, or stromes. It is worked out an effective method of a non specific inhibition of the whooping cough hemagglutination. The immunization of rabbits with hemagglutinin adsorbed or erythrocytes provides a high level of the antihemagglutinin in their serum. (Author)

Kaplun, Z. S.
EFFECT OF METALLIC COBALT DUST ON THE ORGANISM (Deistvie na Organizm plyi Metallicheskogo Kobal'ta). 30 Aug 62, 3p. NIH no. 8-36-62.
Order from OTS or SLA $1.10 62-33365

Trans. of Vrachebnoe Delo (USSR) 1957, suppl., p. 103-104.

DESCRIPTORS: *Cobalt, *Dusts, Industrial medicine, *Lungs, Diseases.

Koturga, L. N.
EPITHELIOID-CELL GRANULOMA IN RESPONSE TO PLAGUE VACCINES. [1962] [8]p. 13 refs. FASEB manuscript no. S 226-2.
Order from OTS or SLA $1.10 63-19008

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 4, p. 19-24.

DESCRIPTORS: *Epithelium, *Cells (Biology), Tissues (Biology), *Tumors, Adaptation (Physiology), *Plague, *Vaccines, Morphology, Immunity, Liver, Lungs, Lymphatic system, *Antigens-antibody reactions.

Conclusions:
Experimental living plague vaccines produce in guinea pigs a reaction very different from plague proper, no matter what the dose. Proliferative processes are dominant. Epithelioid-cell granulomas occur, the changes being located mainly in the organs usually attacked. These granulomas occur in the liver, spleen, regional lymphatic nodes, and lungs. They consist of epithelioid cells, some lymphoid cells and a few leukocytes and giant Langhans cells. Fibroblasts appear later at the edges. The granulomas are removed by resorption or by fibrotic alteration. The ones in the lungs consist mainly of lymphoid cells. They are usually perivascular, and their ultimate fate is the same as in other organs. These granulomas are one of the morphologic signs of immunity. (Author)

Lugovkina, V. P.
ON SEROUS MENINGITIS ASSOCIATED WITH THE INTESTINAL GROUP OF FILTRABLE VIRUSES. 1 Nov 62, 7p. 4 refs. NIH no. 11-1-62.
Order from OTS or SLA $1.10 63-13706

Trans. of Pediatriya (USSR) 1962 [v. 41] no. 2, p. 11-16.

DESCRIPTORS: *Meningitis, Viruses, Virus infections, *Enteroviruses, Intestines, Etiology, *Poliomyelitis, Diagnosis.

At different districts of the Yaroslavl Region there were observed several epidemic outbreaks of serous meningitis in children caused by Coxsackie and ECHO viruses. On the basis of clinical symptomatics serous meningitis caused by these viruses could be differentiated from nonparalytic poliomyelitis of meningeal form and meningitis of other etiology. (Author)

Marzuoli, U. and Negri, S.
ELECTROMYOGRAPHIC ASPECTS OF HEMIFACIAL SPASM IN TWO CASES OF MULTIPLE SCLEROSIS (Aspetti Elettromiografici dell'Emispasmo Facciale in Due Casi di Sclerosi a Placche). [1962] 13p.
Order from SLA $1.60 62-20427

Trans. of Rivista di Neurobiologia (Italy) 1961, v. 7, p. 463-480.

DESCRIPTORS: *Electromyography, Spasms, Face, *Multiple sclerosis, Diagnosis, Bioelectronics.

Merkov, A. M.
CANCER OF THE LUNGS AND SMOKING (REVIEW OF THE STATISTICAL DATA IN THE FOREIGN LITERATURE). [1962] 13p. 3 refs. [NIH] no. 246.
Order from OTS or SLA $1.60 62-23542

Trans. of Voprosy Onkologii (USSR) 1955, v. 1 [no. 5] p. 109-116.
Another trans. is available from K-H $31.25 as K-H-5253-a [1962] 25p.

DESCRIPTORS: *Cancer, *Lungs, Smokes, Cigarettes, *Tobacco, Statistical data.

Novikova, L. A., Volkova, M. A. and others.
EXPERIENCE IN THE USE OF COLLOIDAL RADIOACTIVE GOLD FOR MALIGNANT TUMORS OF THE FEMALE REPRODUCTIVE ORGANS, tr. by Paul V. DePorte. 23 May 61, 6p. 8 refs. NIH no. 5-29-61.
Order from OTS or SLA $1.10 61-23832

Trans. of mono. Voprosy Klinicheskoi i Eksperimental'noi Onkologii, v. 3, Moscow, 1959, p. 203-207.

DESCRIPTORS: *Colloids, *Gold, Therapy, *Radioactive isotopes, Labeled substances, *Cancer, Therapy, Drugs, Tumors, Women, *Reproductive system, Tracer studies, Hemopoietic system, Reticuloendothial system, Radiation effects.

Ryabinina, Z. A.
APPEARANCE OF TUMORS OF THE MAMMARY GLANDS IN RATS. 6 Aug 62 [5]p. 1 ref. NIH no. 8-9-62.
Order from OTS or SLA $1.10 62-32650

Trans. of #Byull[eten'] Eksper[imental'noi] Biol[ogii] i Med[itsiny] (USSR) 1958, v. 46, no. 9, p. 105-107.

DESCRIPTORS: *Tumors, *Mammary glands, *Rats, Liver, Toxicology, *Poisoning, *Carbon tetrachloride, *Carcinogenic agents, Histology, Cells (Biology), Morphology, *Cancer, Etiology.

In studying the destructive changes brought about in the liver of the rat by chronic carbon tetrachloride poisoning, the author discovered the development of tumors of the mammary glands. The tumors were subjected to histological examination. Macro- and microscopic examination showed that the tumors of the mammary glands that developed in the experimental animals and in the controls were fibroadenomas. It is assumed that prolonged administration of CCl_4 creates favorable conditions for the formation of fibroadenomas of the mammary glands in the rat.

Romanenko, A. P.
TWO CASES OF THE COMATOSE FORM OF TERTIAN MALARIA, TREATED WITH SUBCUTANEOUS INJECTIONS OF QUININE AND METHYLENE BLUE (Dva Sluchaya Komatoznoi Formy Trekhdnevnoi Malyarii, Lechennoi Podkozhnymi In"ektsiyami Khinina i Metilenovoi Sin'ki). 7 Feb 63, 2p. NIH no. 2-12-63.
Order from OTS or SLA $1.10 63-15752

Trans. of Meditsinskaya Parazitologiya i Parazitarnye Bolezni (USSR) 1936, v. 5, no. 6, p. 1925-1926.

DESCRIPTORS: *Malaria, Parasitic infections, Therapy, *Drugs, *Quinine, *Methylene blue.

Ryazantseva, N. E., Sergiev, P. G., and Shishlyannikova, M. A.
STUDY OF THE MEASLES VIRUS IN MONKEYS, tr. by Paul V. DePorte. 15 Apr 57, 23p. (Figs. omitted).
Order from OTS or SLA $2.60 62-23559

Trans. of an article from an unidentified source, n. p., n.d., p. 183-196.
Another trans. is available from SLA as R-00966.

DESCRIPTORS: *Measles, Viruses, *Primates, *Virus diseases, Immunity, Freeze-drying, Agglutination, Antigens-antibodies.

The untreated virus of human measles gives rise to clinically manifest disease in mokeys, as a result of which an immunity to reinfection is established. Freeze-drying of the measles virus at -20° deprives it of its pathogenic and immunogenic properties. Drying at -70° preserves the immunogenic properties of the virus but eliminates its pathogenicity; this reveals a possibility of using physical methods of treatment to obtain a vaccinal virus suitable for inoculation. Passage of the measles virus, injured by drying at -20°, through a susceptible organism (monkey) restores its immunizing properties. On the basis of the material presented in this study, a hypothesis may be proposed to the effect that the virus particle consists of three groups of molecules that cause the agglutinogenicity, pathogenicity, and immunogenicity of the virus. In the course of drying, these groups are damaged to different extents; they are also altered in various degrees in the course of multiplication in animal organisms to which the virus is not accustomed. (Author)

Tareev, E. M., Gontaeva, A. A., and Rotenberg, S. S.
A FULMINATING FORM OF TERTIAN MALARIA (Molnienosnaya Forma Trekhdnevnoi Malyarii). 6 Mar 63, 7p. NIH no. 3-5-63.
Order from OTS or SLA $1.10 63-19100

Trans. of Sovetskaya Meditsina (USSR) 1943 [v. 7] no. 4, p. 12-14.

DESCRIPTORS: *Malaria, Toxicity, Parasitic infections, Children, Pathology, Thymus gland, Lymphatic system, Plasmodium.

Tarnopolskaya, P. D.
THE DIFFERENTIAL DIAGNOSIS BETWEEN MALIGNANT AND BENIGN GASTRIC ULCERS BY EMPLOYING THE PENICILLIN TEST. [1962] [8]p.
Order from OTS or SLA $1.10 62-15312

Trans. of [Sovetskaya] Meditsina (USSR) 1955 [v. 19] no. 2, p. 36-40.

DESCRIPTORS: Diagnosis, *Peptic ulcers, *Cancer, Stomach, Tests, *Penicillins, Therapy, Gastrointestinal system, Ulcers.

Since no absolute methods of differentiating benign gastric ulcers from those having undergone malignant transformation, this problem is usually resolved by a process of prolonged dynamic study with conservative therapy which, at times, can result in the wait having been too disastrously long. Penicillin used in massive doses can aid the study of gastric ulcers having infiltrating walls and the therapy required. In the majority of instances, this penicillin test serves as an effective agent differentiating the type of lesion; with this, also, the use of penicillin on ulcerative gastric lesions has an excellent therapeutic effect. (Author)

Tatarinov, A. L.
BALLISTOCARDIOGRAPHIC STUDIES IN CHILDREN WITH RHEUMATIC FEVER. [1962] [15]p. 14 refs. FASEB manuscript no. S 111-2.
Order from OTS or SLA $1.60 63-15990

Trans. of Pediatriya (USSR) 1962 [v. 41] no. 1, p. 67-73.

DESCRIPTORS: *Ballistocardiography, Children, *Rheumatic diseases, Diagnosis, Pathology, Heart.

The majority of children with active rheumatic fever exhibit ballistocardiographic abnormalities. The nature of the ballistocardiographic changes in children with rheumatic fever depends above all on the activity of the rheumatic process, on the severity of myocardial involvement, and on the degree of concomitant circulatory insufficiency. Dynamic ballistocardiographic examination is most valuable in following the clinical course of the disease and in the evaluation of therapy. In several cases, ballistocardiographic changes preceded clinical manifestations of disease. Under the influence of treatment, together with clinical improvement in the form of subsidence of the severity of the rheumatic process, ballistocardiographic findings tended to revert to normal: pathological changes regressed; the ballistocardiographic index increased; and the amplitude of the I-J complexes increased. Ballistocardiography is a valuable auxiliary method of examination in the evaluation of the contractile ability of the myocardium in children with rheumatic fever. (Author)

Pharmacology and Toxicology

HERALD OF THE ACADEMY OF MEDICAL SCIENCES USSR, 1963, VOL. 18, NO. 1. 18 Mar 63 [142]p. JPRS: 18152.
Order from OTS $2.75 63-21331

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 1, p. 1-96.

DESCRIPTORS: *Drugs, *Cardiovascular system, *Heart, *Blood circulation, Stimulation, Cerebral cortex, *Vasoactive agents, Atherosclerosis, *Cardioactive agents, Nitroglycerine, Thiazines, Reserpine, Serotonin, Anesthetics, Analgesics and antipyretics, Arrhythmia, Pharmacology, Hypotension.

Contents:

Pharmacological aspects of effects on the cardiac circulation, by V. V. Zakusov
The effect of pharmacological agents on the reflex reactions of the coronary vessels caused by stimulation of cardiac receptors, by N. V. Kaverina
The use of pharmacological agents to prevent disorders of the myocardial blood supply caused by stimulation of the cerebral cortex, by I. E. Kisin and L. N. Sinitsyn
The effect of some vasodilators and ganglion-blocking agents on the development of collateral vessels in the heart in myocardial infarction in rabbits with arteriosclerosis, by A. A. Myazdrikova
The influence of pharmacological agents on the coronary circulation in experimental spasm of the cardiac vessels, by G. F. Kareva
The influence of pharmacologic agents on the cardiac blood supply in acute disorder of the coronary circulation, by G. A. Markova
The effect of aminophylline, papaverine, nitroglycerin and chloracyzine on the tone of the coronary blood vessels and the myocardial oxygen consumption under conditions of the isolated (by the Langendorf method) heart, by V. V. Buyanov and I. E. Kisin
The effect of reserpine on the cardiac chemoreflexes, by I. N. Pidevich
The effect of serotonin on the mechanoreceptors of the heart and lungs, by A. P. Gilev
The effect of anesthetic and analgesic agents on the pulmonary component of the bezold reaction, by Z. N. Ivanova
The anti-arrhythmic activity of some drugs, by Z. P. Senova
The anti-arrhythmic activity of chloracyzine, by O. V. Ul'yanova
A search for drugs with a long-lasting hypotensive effect, by E. V. Vinogradova and others
Coronary vasodilators: book review by N. V. Kaverina and I. E. Kisin of book by R. Charlier
Resolution 794/168/19, dated 21/9/62
Resolution of the All-Union Conference on Philosophical Problems of the Physiology of Higher Nervous Activity and Psychology.

Anosov, N. N. and Rozin, M. A.
PROSERINE, ESERINE, AND DIBAZOL AND THEIR ADMINISTRATION IN NEUROPATHOLOGY: CHAPS. 1-2, 4-5, 7-8, 12 AND CONCLUSIONS. 19 Dec 62 [86]p. (refs. omitted). FTD-TT-62-1303.
Order from OTS or SLA $8.10 63-19078

Unedited rough draft trans. of mono. Prozerin, Ezerin, Dibazol i Ikh Primenenie v Nevropatologii, Leningrad, 1956, p. 7-33, 50-81, 102-108, 177-196.

DESCRIPTORS: Drugs, Pharmacology, Pathology, *Prostigmine, *Physostigmine, *Dibazol, *Curare alkaloids, Therapy, Diseases, *Nervous system, *Cholinesterase inhibitors, *Psychoanaleptic agents, Parasympatholytic agents, Parasympathomimetic agents, Tranquilizers, Cerebral cortex, *Neuromuscular transmission, *Muscular atrophy, Carbamates, Cholines, Muscles.

Antz, J.
ACUTE AND CHRONIC DORIDEN INTOXICATION (Über Akute und Chronische Intoxikationen mit Doriden). Doctoral dissertation, Bonn U. (West Germany). [1962] 22p. 21 refs.
Order from SLA $2.60 63-10097

Trans. of unidentified mono. (dissertation) Bonn U. 1959.

DESCRIPTORS: *Doriden, Toxicity, *Addiction, Therapy, Drugs, Hypnotics and sedatives.

Delost, P. and Prulhiere, N.
ACTION OF RESERPINE ON THE MOUSE THYROID (Action de la Réserpine sur la Thyroide de la Souris). Oct 62, 6p. 9 refs.
Order from SLA $1.10 63-10184

Trans. of Soc[iete de] Biol[ogie et de ses Filiales], C[omptes] R[endus des Seances] (France) 1961, v. 155, p. 2356-2360.

DESCRIPTORS: *Reserpine, *Thyroid gland, Mice, Drugs, Inhibition, Secretion, Nutrition, Vasoactive agents.

In mice the inhibition of the thyroid found after a prolonged treatment with large doses of reserpine, seems to be the consequence of the inanition produced by reserpine. (Author)

Fedorov, N. A. and Shnol', E. E.
THE DISTRIBUTION OF AMINAZINE IN THE ORGANISM AND ITS WAY OF EXCRETION STUDIES BY LABELED ATOM METHOD: PRELIMINARY REPT. (Izuchenie Metodom Mechenykh Atomov Raspredeleniya Aminazina v Organisme i Putei Ego Vyvedeniya; Predvaritel'noe Soobshchenie) tr. by Wanda M. Feeley. Aug 60, 11p. PSC no. 56-775.
Order from OTS or SLA $1.60 62-24333

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1956, v. 56 [no. 2] p. 139-145.
Other translations are available from ATS as ATS-85K22R, 7p. and from SLA as RT-4309.

DESCRIPTORS: Distribution, *Psychotrophic agents, *Chlorpromazine, Body, Excretion, *Tracer studies, Labeled substances, Urine, Chromatographic analysis, Tranquilizers.

The preliminary data on the dynamics of distribution of aminazine labeled with a radioactive sulfur in the tissues of rats after subcutaneous administration are presented in this work. The maximum accumulation of the preparation is observed in the lungs. A very low content of the preparation is observed in the blood. Aminazine penetrates easily the organs and tissues and also the blood-brain barrier. Our data on the dynamics of distribution of aminazine in the central nervous system make it impossible to single out any section as a preeminent site of the accumulation of the preparation; however, maximum accumulation is observed in the cerebral cortex. After subcutaneous administration, aminazine is excreted from the organism only in the urine; 97.4 per cent of an administered dose is excreted during 4 days. With per os administration only a small portion of aminazine is absorbed (16-17 per cent). The unabsorbed aminazine is excreted into the intestines during 8-9 days. Paper chromatography indicates that aminazine is excreted from the organism in an unchanged form. (Author)

Grebennik, L. I.
METHODS FOR THE DETERMINATION OF AMINAZINE AND ITS EXCRETION FROM THE SYSTEM AFTER INTRAGASTRIC AND SUBCUTANEOUS ADMINISTRATION (Metody Opredeleniya Aminazina i Vydelenie Ego iz Organisma Posle Vvedeniya v Zheludok i Pod Kozhu) tr. by Wanda M. Feeley. Oct 62, 9p.
PSC no. 57-1615.
Order from OTS or SLA $1.10 62-24331

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1957, v. 57, p. 208-213.

DESCRIPTORS: Determination, *Chlorpromazine, *Excretion, Body, Injection, Gastrointestinal system, Skin, Drugs, *Psycotrophic agents, Tranquilizers.

Three methods are described for determining aminazine in biological material by means of which aminazine in an unchanged form and its metabolites in the organism can be determined. It is established by the tests on rats that 1.6-3.2 per cent of aminazine in an unchanged form is excreted in the urine; altogether with subcutaneous administration 44.4 per cent of aminazine and its decomposition products is excreted in the urine and feces during 4 days, and with intragastric administration 51.6 per cent; the metabolites of aminazine are excreted from the organism by the kidneys and intestines. (Author)

Hazard, R., Fanchamps, A., and Renier-Cornec, A.
REVERSAL OF THE EPINEPHRINE REVERSED BY TOLAZOLINE (PRISCOLINE) BY VASOPRESSOR OR OXYTOCIC POSTERIOR PITUITARY PREPARATIONS (Désinversion par des Préparations Posthypophysaires Vasopressives ou Ocytociques de l'Adrénaline Inversée par la Tolazoline (Priscol)). [1962] 3p. 1 ref.
Order from SLA $1.10 63-10074

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1962, v. 155, p. 1450-1452.

DESCRIPTORS: Drugs, *Vasoactive agents, *Epinephrine, Chlorpromazine, *Pituitary hormones, Pharmacology, Amino acids, Blood pressure, Hypertension.

Lacroix, E. and Leusen, I.
INOTROPIC ACTION OF THE SYMPATHOMIMETIC AMINES AND PHOSPHORYLASIC ACTIVITY OF THE ISOLATED RAT HEART (Action Inotrope des Amines Sympathomimetiques et Activite Phosphorylasique du Coeur de Rat Isole). 24 July 62, 16p. (figs. omitted) 26 refs.
Order from SLA $1.60 62-18779

Trans. of Arch[ives] Internat[ionales de] Pharmacodyn[amie et de Therapie] (Belgium) 1961, v. 133, p. 89-100.

DESCRIPTORS: *Contraction, *Heart, *Rats, *Drugs, *Sympathomimetic agents, Amines, Phosphorylation, Epinephrine, Isoniazid, Reserpine.

The influence of certain sympathomimetic amines on the phosphorylasic activity of rat hearts isolated and perfused according to Langendorff's technic has been determined. The existence of a qualitative parallelism between the positive inotropic effect and the influence on the phosphorylasic activity was examined in a series of conditions in the course of which the inotropic effect of the sympathicomimetic amines was modified by reserpine, iproniazide and the dichloro-analogue of isoproterenol (DCI). The reserpinic treatment abolishes the stimulation as much of the inotropic activity as of the phosphorylasic activity normally observed under the influence of tyramine, it does not modify the reaction towards noradrenalin. Treatment with iproniazide modifies neither the positive inotropic effect nor the influence on the phosphorylasic activity exerted by tyramine. Perfusion of the isolated heart with a solution containing dichloro-isoproterenol at a concentration of 1/2000000 abolishes the stimulation of the phosphorylasic activity and the positive inotropic effect of the noradrenalin. It was found that in the absence of a distinct effect on the cardiac inotropism, reserpine and DCI provoke an appreciable stimulation of the phosphorylasic activity of the isolated heart. (Author)

Lando, L. I.
ELECTROPHORETIC STUDY OF SERUM PROTEIN FRACTIONS IN SCHIZOPHRENICS AND THEIR MODIFICATION FOLLOWING ADMINISTRATION OF NEUROLEPTIC COMPOUNDS (Elektroforeticheskoe Issledovanie Belkovykh Fraktsii Syvorotki Krovi Bol'nykh Shizofreniei i Ikh Dinamiki pod Vliyaniem Lecheniya Neirolepticheskimi Veshchestvami) tr. by W. M. Feeley. Dec 60, 11p. (refs. omitted).
PSC no. 59-521.
Order from OTS or SLA $1.60 62-24324

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1959, v. 59 [no. 2] p. 135-142.

DESCRIPTORS: *Electrophoresis, Blood proteins, *Psychoses, Drugs, Tranquilizers, Psychotrophic agents, *Reserpine, *Chlorpromazine, Tranquilizers.

The study of a microelectrophoretic method of serum proteins in schizophrenics, before and during aminazine and reserpine therapy is presented in this article. (Author)

Lichtlen, P., Schaub, F., and Bühlmann, A.
EXPERIMENTAL STUDIES AND THERAPEUTIC EXPERIENCES WITH ANGIOTENSIN (Experimentelle Untersuchungen und Therapeutische Erfahrungen mit Angiotensin). [1962] 25p. 76 refs.
Order from SLA $2.60 63-10190

Trans. of Schweiz[erische] Med[izinische] W[ochenschrift] 1962, v. 92, 26 May, p. 639-647.

DESCRIPTORS: Therapy, Drugs, *Hypertensin, Blood pressure, *Vasoactive agents, *Sympathominetic agents, *Shock (Pathology).

A study of angiotensin II in normal blood pressure subjects and in the treatment of patients with peripheral vacular shock is reported. The pressor effect of angiotensin II is based on an increase in peripheral vascular resistance, while cardiac output remains constant. There is also a slight rise in pulmonary arterial pressure and pulmonary vascular resistance,

probably due to pulmonary vasoconstriction (heart catheterization studies in 6 normotensive men.) The dose-effect curve in 14 normotensive individuals shows a linear rise in systolic and - to a lesser extent - diastolic arterial pressure from 2.5 to 12.5 γ angiotensin II per minute. Parallel to the pressure rise, a fall in pulse rate occurs. (Author)

Mariani, L., Breda, G., and Villani, R.
RESERPINE AND EXPERIMENTAL ANURIA CAUSED BY SEROTONIN ORIGIN (Reserpina ed Anuria Sperimentale di Origine Serotoninica). June 62, 6p. 6 refs.
Order from SLA $1.10 62-20034

Trans. of Soc[ieta] Ital[iana di]Biol[ogia] Sper[imentale]. Boll[ettino] 1961, v. 37 [no. 14] p. 633-635.
Another trans. is available from SLA $1.10 as 62-18178 [1962] 6p.

DESCRIPTORS: Drugs, Pharmacology, *Reserpine, *Serotonin, *Urine, *Secretion, Inhibition, Diuretics, Heat, *Chlorpromazine, Stimulation, Peritoneum.

The results shown agree with the hypothesis that reserpine inhibits diuresis by mobilization of serotonin from its depots. Chlorpromazine, although, it can itself inhibit the diuresis, proves to be capable of inhibiting the anuria due to reserpine given in large doses. Whenever the serotonin depots of the organism are emptied by repeated administration of reserpine, reserpine becomes incapable of producing its typical antidiuretic action. The experiments give us further data confiming the fact that the anuria following a heat irritation of the peritoneum is due to mobilization of serotonin, since the animals given repeated reserpine treatment become incapable of responding with the usual renal block to the irritation due to hot water in the peritoneum. (Author)

Meyer, J. R.
ANABETIM, A NEW DRUG FOR DIABETICS (Anabetim, um Novo Medicamento para Diabeticos). Oct 62, 4p.
Order from SLA $1.10 63-10096

Trans. of Biologico (Brazil) 1960, v. 26, p. 52-55.

DESCRIPTORS: *Drugs, *Diabetes, Hyperglycemia, Toxicity, Effectiveness, Hypoglycemia.

The present paper is concerned with therapeutic trials conducted with the infusion of a plant belonging to the family of Anthemideas in 12 diabetic patients. The results showed a distinct hypoglycemic action and disappearance of other symptoms such as nycturia and vulvar pruritus, chronic infectious and suppurative processes. The patients did not present any unfavorable effects from the use of this drug, which did not produce any signs of intoxication either, when previously it was tested in large doses in laboratory animals. (Author)

Minz, B. and Noël, P.
PERIPHERAL AND CEREBRAL CORTICAL REACTIONS TO THE ADRENERGIC MEDIATORS UNDER THE EFFECT OF BRETYLIUM AND GUANETHIDINE (Réactions Périphériques et Cortico-Cérébrales aux Médiateurs Adrénergiques Sous l'Effet du Bretylium et de al Guanethidine). [Oct 62] 5p. (figs. omitted) 8 refs.
Order from SLA $1.10 63-10073

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1962, v. 156, p. 593-597.

DESCRIPTORS: Pharmocology, *Vasoactive agents, Drugs, *Cerebral cortex, Epinephrine, Pituitary hormones, Adaptation (Physiology), Chemorecptors, *Guanethidine, Autonomic nervous system.

Pignanelli, M.
OBSERVATIONS ON THE EFFECT OF AN ANABOLIC STEROID (4-CHLOROTESTOSTERONE ACETATE) IN ANIMALS KEPT ON A CARIOGENIC DIET (Osservazioni sull'Effetto di uno Steroide Anabolizzante (4-Cloro-Testosterone Acetato) in Animali Mantenuti a Dieta Cariogena). July 62, 6p. 29 refs.
Order from SLA $1.10 62-20109

Trans. of Rassegna Internaz[ionale] di Stomatologia Pratica (Italy) 1961, v. 12, July/Aug, p. 273-280.

DESCRIPTORS: *Testosterone, *Adrenal cortical extract, Drugs, Animals, *Hamsters, *Dental caries, Diet, Etiology, *Inhibition.

Experiments have been made by the author on the effect produced by 4-Chlortestosterone acetate on golden hamsters treated with a caries-conducive diet and on others treated with a caries-conducive diet plus cortisone. The percentage of incidence of caries in animals treated with anabolic steroid would seem to diminish compared with the controls; that incidence seems to be still more reduced when compared with that of animals treated also with cortisone. (Author)

Prikolotin, M.
STUDY OF THE TOXITY OF TRINITROTULUENE AMONG INDUSTRIAL WORKERS IN THE PLOVDIV DISTRICT. [1962] 7p. 6 refs.
Order from SLA $1.10 63-10058

Trans. of Suvremenna Meditsina (Bulgaria) 1961, v. 12, no. 10, p. 29-34.

DESCRIPTORS: Toxicity, *TNT, Blast, Rocks, Industrial medicine, Air, Contamination, Liver, Skin, Neuroses, Anemias, Leukopenia, Absorption, *Poisoning.

After mentioning the literature on the toxicity of TNT, the author presents the results of an examination of 106 workmen in close contact with TNT. The air was analyzed, and a clinical and laboratory investigation of the workmen made. No case of acute poisoning was encountered. Chronic intoxication was observed in 21.4% of all persons; they all have been in contact with TNT for 3 to 10 years. The intoxication consisted in the lowering the detoxifying power of the liver and in onsets of functional neuroses and hypochronic anemias combined with leukopenia. TNT entered the body through the skin and the alimentary canal. (Author)

Riniker, B., Brunner, H., and Schwyzer, R.
β-ASP[1], VAL[5]-HYPERTENSIN II, A HYPERTENSIN ANALOGUE WITH PARTICULARLY GREAT BIOLOGICAL ACTIVITY (β-Asp[1], Val[5]-Hypertensin II, ein Hypertensin-Analoges mit Besonders Hoher Biologischer Aktivität). Aug 62, 2p. 3 refs.
Order from SLA $1.10 62-20107

Trans. of Angewandte Chemie (West Germany) 1962, v. 74, no. 13, p. 469.

DESCRIPTORS: *Hypertensin, *Drugs, Aspartic acid, Valine, *Amino acids, *Hydrolysis, Chemical analysis, Paper chromatography.

Schuler, W. and Albrecht, W.
INFLUENCE OF HYPOTENSIVE AGENTS ON EXPERIMENTAL RABBIT ATHEROMATOSIS (Einfluss Bekannter Hypotensiva auf die Experimentelle Kaninchenatheromatose). [1962] 12p. 10 refs.
Order from SLA $1.60 63-10115

Trans. of Schweiz[erische] Med[izinische] W[ochen]schr[ift] 1962, v. 92 [no. 33] p. 1007-1009.

DESCRIPTORS: *Vasoactive agents, *Arteriosclerosis, Sympatholytic agents, Rabbits, Aorta, Hypertension, Drugs, Cholesterol, *Reserpine, *Guanethidine, Hydrazine Derivatives, Hypotension.

Three different clinically useful hypotensive agents, Serpasil, Apresoline and Ismelin were examined for their antiarteriosclerotic effect in dietary atheromatosis of rabbits. On administration during the feeding period, these chemically different hypotensive agents which also differ in their mode of action, reduce markedly the amount of cholesterol in the aortas and their macroscopically visible atheromatous affection, but do not influence the hypercholesterolemia. The significance of these findings from the clinical point of view as well as for evaluation of hypercholesterolemia as a cause of arteriosclerosis is discussed. (Author)

Smirnova, A. V.
ACTIVITY OF CERTAIN HORMONAL PREPARATIONS FOLLOWING AMINAZINE THERAPY (Aktivnost' Nekotorykh Gormonal'nykh Preparatov v Usloviyakh Primeneniya Aminazina) tr. by W. M. Feeley. Jan 60 [10]p. (refs. omitted). PSC no. 58-1979.
Order from OTS or SLA $1.10 62-24325

Trans. of Problemy Endokrinologii i Gormonoterapii (USSR) 1958, v. 4 [no. 3] p. 22-27.

DESCRIPTORS: Biochemistry, Pharmacology, *Hormones, *Chlorpromazine, Tranquilizers, Drugs, Thyroxine, Insulin, Epinephrine, Hyperglycemia, Metabolism, Psychotrophic agents.

The activity of insulin and thyroidin is decreased considerably against a background of the effect of aminazine zine. The hyperglycemic reaction of adrenal increases. The effect of adrenalin on gaseous metabolism is inhibited slightly. (Author)

Taguchi, Tanezo; Komori, Osamu, and Kojima, Masaharu.
PREPARATION OF 1-(2-MERCAPTOETHYL) GUANIDINE SULFATE AND DETECTION OF AZIRIDINES BY COLOR REACTION. [1962] 6p. (fig. omitted) 12 refs.
Order from SLA $1.10 62-20056

Trans. of [Yakugaku Zasshi] (Japan) 1961, v. 81 [no. 9] p. 1233-1236.

DESCRIPTORS: Preparation, *Guanethidine, Detection, Drugs, *Aziridines, *Colorimetric analysis, Thiols, *Radioprotective agents, Thiourea derivatives.

2-(2-Aminoethyl)-2-thiopseudourea (AET) is known to be a preventor of radiation sickness. When treated with 1 mole NaOH, the compound was almost completely converted into 1-(2-mercaptoethyl) guanidine (MEG) by a reaction involving transguanylation. The conversion of AET into MEG would also take place in the living organism and that actually it is MEG that prevents radiation - sickness, i.e. AET is the "prototype" of MEG. (Author)

Taguchi, Tanezo, Komori, Osamu, and Kojima, Masaharu.
PREPARATION OF 2-(2-AMINOALKYL)-2-THIOPSEUDOUREA SALTS. [Pt.] 26 of Studies in Stereochemistry. [1962] 14p. 8 refs.
Order from SLA $1.60 62-20207

Trans. of Yakugaku Zasshi (Japan) 1961, v. 81 [no. 9] p. 1229-1233.

DESCRIPTORS: Preparation, *Thiourea derivatives, Amino compounds, Alkyl radicals, Salts, Chlorides, Bromides, *Radioprotective agents, Drugs.

Radiobiology

HYGIENE AND SANITATION, 1963, VOL. 28, NO. 1: [SELECTED] TRANSLATIONS. 2 Apr 63 [36]p. 27 refs. JPRS: 18492.
Order from OTS $1.00 63-21475

Trans. of Gigiena i Sanitariya (USSR) 1963, v. 28, no. 1, p. 53-55, 83-89, 95-99, 105-108.

DESCRIPTORS: *Health physics, Dosimeters, *Sanitation, *Radioactive isotopes, Nose, Temperature, *Strontium, Adaptation (Physiology), *Milk, Casein, *Mucous membranes, *Food, Radiation tolerance

Contents:
Problem of individual dosimetric control methods, by G. A. Zubovskii and M. A. Sobolevskii
The problem of determining the maximum permissible levels of strontium-90 content in food products, by P. P. Lyarskii and A. A. Moiseev
Comments on sanitary rules of work with radioactive substances and sources of ionizing radiation, by A. P. Denisov
Changes in the nasal mucous membrane upon adaptation to cold in the north, by N. I. Bobrov
Passage of strontium-90 from milk to various dairy products during various technological production processes, by Z. V. Dubrovina and O. M. Belova

Lebekhov, P. I.
BURNS OF THE CORNEA IN EXPERIMENTAL RADIATION SICKNESS (Ob Ozhogakh Rogovoi Obolochki pri Eksperimental noi Luchevoi Bolezni) tr. by Jane A. McLean. [1962] [11]p. 1 ref.
Order from OTS or SLA $1.60 63-13619

Trans. of Voenno-Meditsinskii Zhurnal (USSR) 1958, no. 4, p. 12-15.

DESCRIPTORS: *Burns, *Cornea, Radiation sickness, *Radiation effects, Communicable diseases, Eye, Adaptation (Physiology).

Petrov, V. A., Palladieva, N. M., and Pivanova, P. S.
DOSIMETRIC AND QUALITATIVE CHARACTERISTICS OF PRIMARY AND SCATTERED RADIATION EMITTED BY THE URD$_d$-110-K-4 DIAGNOSTIC APPARATUS. [1962] [16]p. 7 refs. FASEB manuscript no. S 68-2.
Order from OTS or SLA $1.60 63-15158

Trans. of Vestnik Rentgenologii i Radiologii (USSR) 1962, v. 37, no. 2, p. 42-47.

DESCRIPTORS: Radioactivity, Measurement, X-ray tubes, Radiation measurement systems, X-rays, *Medical examination, Diagnosis, Medical equipment, *Dosimeters, *Health physics, *X-ray filters, *Radiological dosage, Radiation tolerances, Radiological contamination, *Radiation hazards, Sex glands, Reproductive system, Genetics.

This report describes an investigation of the dosimetric and qualitative characteristics of direct and afocal X-radiation in the air without a diffuser. The doses were measured on the surface of a uniform and tissue-equivalent phantom substituting for the patient while the corresponding factors of scattering by the surface of the phantom were determined for radiations of different quality. The focal radiation originating on the side of the direct beam axis was measured in order to characterize the total irradiation and to determine the doses reaching various parts of the body, the sex organs in particular.

Surgery

Cailar, J. du.
SEARCH FOR ATOXIC ANESTHESIA: ELECTRONARCOSIS. [1962] [5]p. 5 refs.
Order from SLA $1.10 62-20073

Trans. of Minerva Chirurgica (Italy) 1954, v. 9, no. 10, p. 488-490.

DESCRIPTORS: Anesthesia, *Anesthetics, *Electrosleep, Electric currents, Barbituates, Toxicity, Law frequency, Surgery.

An electric method of producing surgical anesthesia by low-frequency and low-intensity alternating current is described. The method consists in increasing the current very slowly after the test animal has been prepared with barbiturates. It is believed that it is a question of exciting the diencephalic sleep center. By reducing the excitation of the motor and tonic centers of the base of the encephalon by the administration of barbiturates, the inconveniences of the previous techniques of electric anesthesia are eliminated.

Lembert, Antoine.
MEMOIR ON ENTERORRHAPHY WITH THE DESCRIPTION OF A NEW PROCEDURE FOR PERFORMING THIS SURGICAL OPERATION (Mémoire sur l'Entéroraphie, avec la Description d'un Procédé Nouveau pour Pratiquer cette Opération Chirurgicale). [1962] 14p. (figs. omitted).
Order from SLA $1.60 62-18778

Trans. of Repertoire Général d'Anatomie et de Physiologie Pathologiques et des Cliniques Chirurgicales (France) 1826, v. 2, p. 100-107.

DESCRIPTORS: *Surgery, *Intestines, Excision.

Tarneaud, J.
THE SPEECH OF ONE WHO HAS HAD A LARYNGECTOMY. [1962] 3p. 12 refs.
Order from SLA $1.10 63-10713

Trans. of Annales d'Oto-Laryngologie (France) 1948, v. 65 [no. 3/4] p. 155-158.

DESCRIPTORS: *Speech, Excision, *Larynx, *Mechanical organs, Training, Medical equipment, Esophagus, Respiration, Otorhinolaryngology.

Zoology

FISHING ECONOMY, 1960 [VOL. 36] NO. 7: [SELECTED] TRANSLATIONS. 10 Apr 63 [28]p. JPRS: 18647.
Order from OTS $0.75 63-21559

Trans. of Rybnoe Khozyasitvo (USSR) 1960 [v. 36] no. 7, p. 15-43.

DESCRIPTORS: *Fishes, *Fisheries, Economics, Mechanical engineering, *Marine biology, Oceanography, Baltic Sea, Black Sea, Scientific research, Scientific organizations, Polar regions, Pacific Ocean, Caspian Sea.

Contents:
Scientific Research Institute of Mechanization of the Fishing Industry (NIIMRP) by P. A. Kuraptsev
Polar Scientific Research Institute of Marine Fishing and Oceanography imeni N. M. Knipovich (PINRO) by Yu. S. Pokrovskii
Pacific Ocean Scientific Research Institute of Marine Fishing and Oceanography (TINRO) by A. G. Kaganovskii
Baltic Scientific Research Institute of Marine Fishing and Oceanography (Balt NIRO) by P. V. Petelin
Caspian Scientific Research Institute of Marine Fishing and Oceanography (Kasp NIRO) by I. A. Piskunov
Azov-Black Sea Scientific Research Institute of Marine Fishing and Oceanography (Azcher NIRO) by I. O. Sakovets
Azov Scientific Research Institute of the Fishing Industry (Az NIIRKH) by D. I. Ivanov.

ZOOLOGICAL JOURNAL, 1963, VOL. 42, NO. 1: [SELECTED] TRANSLATIONS. 4 Apr 63 [89]p. 83 refs. JPRS: 18548.
Order from OTS $2.25 63-21502

Trans. of Zoologicheskii Zhurnal (USSR) 1963, v. 42, no. 1, p. 3-10, 20-31, 78-91, 138-139.

DESCRIPTORS: *Zoology, *Fisheries, Marine biology, Aquatic animals, Plants, North Sea, Baltic Sea, *Lakes, Irrigation systems, Scientific research, Mammals, *Radioactive isotopes, Excretion, Insects.

Contents:
Biological fishery management science at a new stage, by L. S. Berdichevskii
New settlers among the flora and fauna of the Northern Sea and the Baltic, by I. I. Nikolaev
Estuarine fauna colonization of Nikolaev and Yuzhnyi reservoirs of the Ukraine by means of canals, by P. A. Zhuravel
The present state of theriology in the USSR and abroad, by G. A. Novikov
On the accumulation and excretion of the radioactive isotopes of seven chemical elements in Dragonfly larvae, by G. A. Volkova.

Andryashev, A. P. and Makushok, V. M.
AZYGOPTERUS CORALLINUS (PISCES, BLENNIOIDEI): A NEW FISH WITHOUT PAIRED FINS, tr. by Laurence Penny. [1962] [6]p. (figs. omitted) 8 refs.
Order from OTS or SLA $1.10 62-33568

Trans. of Voprosy Ikhtiologii (USSR) 1955, no. 3, p. 50-53.

DESCRIPTORS: *Fishes, Taxonomy, Identification, *Sea of Japan, *Morphology.

Barsukov, V. V. and Permitin, Yu. E.
A NEW SPECIES OF THE GENUS PAGETOPSIS (FAMILY CHAENICHTHYIDAE) tr. by Mrs. Kudrik. [1962] [6]p. (figs. omitted) 3 refs.
Order from OTS or SLA $1.10 62-33567

Trans. of Zoologicheskii Zhurnal (USSR) 1958, v. 37, no. 9, p. 1409-1411.

DESCRIPTORS: *Fishes, *Arctic regions, Taxonomy, Identification, Distribution.

Luk'yanovich, F. K. and Ter-Minasyan, M. E.
[GRAIN BEETLES] (BRUCHIDAE). III. BRUCHINAE, tr. by R. Ericson. 7 Aug 58, 2p. (figs. refs. omitted)
Order from OTS or SLA $1.10 61-19189

Trans. of Fauna S.S.S.R. [Novaya Seriya] 1957, v. 24, no. 1, p. 31-33 and 143-144.

DESCRIPTORS: *Cereals, *Coleoptera, Reproduction, Seeds, Taxonomy, Plants (Botany), Insects, Ecology.

Parin, N. V.
THE RANGE OF THE SAURY (COLOLABIS SAIRA BREV. - SCOMBRESOCIDAE, PISCES) AND EFFECTS OF OCEANOGRAPHIC FEATURES ON ITS DISTRIBUTION, tr. by Laurence Penny. [1962] [6]p. (figs. omitted) 14 refs.
Order from OTS or SLA $1.10 62-33566

Trans. of Akademiya Nauk SSSR. Doklady, 1960, v. 130, no. 3, p. 649-652.

DESCRIPTORS: *Fishes, *Pacific Ocean, Distribution, Taxonomy, Oceanography, Marine biology.

Rubtzov, I. A.
EUSIMULIUM AUREUM (FRIES) - THE GOLDEN BLACKFLY, tr. by R. Ericson. 30 Sep 59, 2p. (figs. refs. omitted).
Order from OTS or SLA $1.10 62-15643

Trans. of Fauna S.S.S.R. [Novaya Seriya] 1956, v. 6, no. 6, p. 505.

DESCRIPTORS: *Diptera, Insects, Taxonomy, Ecology.

Svetovidov, A. N.
A REVIEW OF THE EUROPEAN SPECIES OF THE GENUS TRIGLA. PISCES TRIGLIDAE (Obzor Predstavitelei Roda Trigla (Pisces Triglidae) tr. by M. Slessers. 1958 [20]p. (figs. omitted). FWS Trans-26.
Order from OTS or SLA $1.60 62-23861

Trans. of [Akademiya Nauk SSSR]. Sevastopol'akaya Biologicheskaya Stantsiya. Trudy, 1936, v. 5, p. 297-317.

DESCRIPTORS: *Fishes, Europe, *Black Sea, Mediterranean Sea, Taxonomy.

Various species of genus Trigla are described and analyzed, singling out essential characteristics of the species so that they could be readily discriminated and accurately identified. (Author)

Yashnov, V. A.
COMPARATIVE MORPHOLOGY OF THE SPECIES CALANUS FINMARCHICUS S. L., tr. by M. Melrose. Mar 59 [11]p. 4 refs. [DSIR] NLL M 8862.
Order from OTS or SLA $1.60 62-32832

Trans. of Zoologicheskii Zhurnal (USSR) [1957] v. 36, no. 2, p. 191-198.

DESCRIPTORS: *Morphology, Anatomy, *Crustacea, Ecology, Taxonomy, Marine biology, *Aquatic animals, Plankton, Arthropods.

Examined in this article are the results of the comparative study of the structure of the head and legs of the Vth pair in males and females.

Zebrowski, Zbigniew.
TRAWLS, tr. by M. Sierpinski. 1963 [110]p. 11 refs. PL-480 Int.
Order from OTS $1.50 60-21500

Trans. of mono. Wloki Trawlerowe, Warsaw, 1954.

DESCRIPTORS: *Fisheries, *Ship auxiliary equipment, *Nets, Design, Construction, Operation, *Floats, Weight, *Cordage, Towing cables, Protective coverings, Hoists, Safety

Contents:
Historical
Construction of the trawl and its component parts
Efficacy of the trawl
Classification of trawls
Construction of net
Assembly of trawls
Weighting gear
Roping
Protection devices
Towing gear
Fishing gear
Fishing operations
Trawling
Breakdown during towing
Work safety in fishing operations

CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 131 (CHEMISTRY SERIES). 15 Apr 63 [16]p. JPRS: 18695.
Order from OTS $0.50 63-21572

Consists of abstracts of articles from the scientific and technical journals of Hungary and Poland.

DESCRIPTORS: *Abstracts, Bibliography, *Chemistry, Textiles, Complex compounds, Physical chemistry, Biochemistry, Chemical analysis, Electrochemistry, Organic compounds, Radiochemistry.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 133 (CHEMISTRY SERIES). 16 Apr 63 [31]p. JPRS: 18727.
Order from OTS $0.75 63-21586

Consists of abstracts of articles from the scientific and technical journals of East Germany, and Poland.

DESCRIPTORS: *Abstracts, Bibliography, *Chemistry, Inorganic substances, Radiochemistry, Complex compounds, Metals, Physical chemistry, Organic compounds, Metalorganic compounds.

RUMANIAN CHEMIST ACADEMICIAN COSTIN D. NENITESCU: BIOGRAPHIC INFORMATION. 26 Apr 63, 5p. 8 refs. JPRS: 18922.
Order from OTS $0.50 63-21691

Trans. of [Academia Republicii Populare Romine]. Studii si Cercetari de Chimie (Rumania) 1962 [v. 10] no. 3/4, p. 291-294.

DESCRIPTORS: Scientific personnel, *Chemists, Rumania, *Biographies

Analytical Chemistry

Andreicheva, M. and Bailov, D.
THE ACCUMULATION OF CHLOROGENIC ACID IN SOME TYPES OF TOBACCO OF THE VARIETY N. TABACUM DURING DIFFERENT STAGES OF THE DEVELOPMENT OF PLANTS. [1962] 14p. 17 refs.
Order from SLA $1.60 62-18831

Trans. of Bulgar[ska] Akad[emiya na] Nauk[ite]. Tsentral[en] Nauch[noizsledovatelski] Inst[itut po] Rastenievudstvo. Izvest[iya] 1961, v. 10, p. 27-38.

DESCRIPTORS: *Chlorogenic acids, *Tobacco, Plants (Botany), Growth, Morphology, Chromatographic analysis.

In the earliest stages of growth (development) the tobacco leaf does not contain chlorogenic acid. The chlorogenic acid content in the subsequent stages of tobacco plant growth is localized in the "leafy part" of the leaves. The amount of chlorogenic acid in the leaves depends on the degree of ripeness and on the position of the leaf on the stem: the leaves of the lower belts acquire a greater amount of chlorogenic acid during their growth (development) than the leaves of the upper (V and the following belts) of the same degree of ripeness. The tobacco leaves contain a maximum amount of chlorogenic acid shortly after they attain technical ripeness. At the end of the season the upper leaves acquire a lower chlorogenic acid content than the lower leaves had had at the same degree of ripeness. The chlorogenic acid content in the tobacco leaves depends on the brand. Of the ten investigated brands the Virginia bright brand showed the lowest chlorogenic acid content, while the highest, especially in the upper belts, was the Stanimashko pembe 536. (Author)

Budesinsky, B.
A UNIVERSAL APPARATUS FOR SEMIMICRODETERMINATION OF ACTIVE HYDROGEN AND QUANTITATIVE HYDROGENATION. 11 July 62 [11]p. 12 refs.
Order from SLA $1.60 62-18994

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1959, v. 24, p. 2948-2953.

DESCRIPTORS: *Hydrogen, *Hydrogenation, Gases, Quantitative analysis, Manometers, Volumetric analysis, Organic compounds.

An improved universal apparatus for gas-volumetric determinations is described. The apparatus has been used successfully for the semimicrodetermination of active hydrogen by means of $LiAlH_4$ or CH_3MgI, and for quantitative hydrogenation on palladium, platinum, or Raney nickel. (Author)

Kleiner, K. E. and Obolonchik, N. V.
DETERMINATION OF OXYGEN IN METALS AND OXIDES USING SULFUR MONOCHLORIDE S_2Cl_2. III. DETERMINATION OF OXYGEN IN THE OXIDES OF CHROMIUM, TITANIUM, ZIRCONIUM, AND IN SOME METALS AND ALLOYS, tr. by D. G. Miller. Feb 62, 8p. 2 refs.
Order from OTS or SLA $1.10 UCRL Trans-801(L)

Trans. of Ukrainskii Khimicheskii Zhurnal (USSR) 1959, v. 25, p. 370-372.

DESCRIPTORS: Chemical analysis, *Oxygen, Metals, Oxides, *Sulfur compounds, *Chlorides, *Chromium compounds, *Titanium compounds, *Zirconium compounds, Temperature, Bromination, Graphite, *Nickel alloys, *Copper, *Cadmium, Halides.

It is shown that the determination of oxygen in ZrO_2, TiO_2, and Cr_2O_3, copper, cadmium, nickel, chromium, titanium, zirconium, nickel-molybdenum alloys and nickel-tungsten alloys can be carried out by the treatment of these substances by the vapors of sulfur monochloride in a current of nitrogen at 600° to 900°. For the production of analytical concentrates, one can distill the free metal from the samples in the form of a halide. Boats and other apparatus accessories can be fabricated out of graphite-a material indifferent to sulfur monochloride. (Author)
(See also 59-11237)

Konopik, Nelly.
THE POLAROGRAPHIC DETERMINATION OF GERMANIUM AS PYROCATECHOLGERMANIC ACID. [1962] 15p. 17 refs.
Order from SLA $1.60 62-18539

Trans. of Monatshefte für Chemie (Austria) 1960, v. 91, p. 717-728.

DESCRIPTORS: *Electrochemistry, *Complex compounds, *Pyrocatechol, *Germanium compounds, Dioxides, Acids, Electrolytes, Mercury electrodes, Buffers, Glycines, Arsenic, Silicic acids.

Pyrocatecholgermanic acid gives a typical polarographic wave in acid solution (pH 4.0) at the dropping mercury electrode which at pH 1.5 lies at -0.65 V vs. the sat. calomel electrode. The wave height is proportional to concentration and is therefore suitable both for the qualitative identification and the quantitative determination of germanium after its separation by extraction or distillation. (Author)

Körbl, J. and Pribil, R.
COMPLEXOMETRIC DETERMINATION OF OXIDIZABLE SULFUR AS MANGANESE (II) SULFATE. Pt. 5 of Analytical Applications of Silver Permanganate. 9 Aug 62 [8]p. 14 refs.
Order from SLA $1.10 62-18989

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1956, v. 21, p. 322-325.

DESCRIPTORS: *Sulfur, Chemical analysis, Complex compounds, *Manganese compounds, Sulfates, Adsorbants, *Silver compounds, Permanganates.

A complexometric method for determining oxidizable sulfur after absorption of SO_2 in the thermal decomposition product of $AgMnO_4$ has been developed. SO_2 is absorbed quantitatively in the form of Ag_2SO_4 and $MnSO_4$. By reaction with H_2O_2 and MnO_2, the Ag_2SO_4 is converted to an equivalent amount of $MnSO_4$, which is then determined complexometrically. (Author) (See also 62-18988)

Kubinova, M., Vilim, O., and Svoboda, V.
DETERMINATION OF TRACES OF WATER IN HYDROCARBONS. Jan 62 [6]p. 4 refs.
Order from SLA $1.10 62-20119

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1961, v. 26, p. 1320-1324.

DESCRIPTORS: Determination, Water, *Hydrocarbons, *Microanalysis, Hydrolysis, Titanium compounds, Chlorides, Test equipment.

A description is given of an analytical method for the determination of very small concentrations of water in hydrocarbons, amounting to up to 5×10^{-4}%, which is based on the measurement of the turbidity appearing in the hydrolysis of titanium (IV) chloride due to the effect of water. A description is given of the used devices and the measuring results are statistically processed. The method takes only a short time and does not require any special apparatus. (Author)

Luft, Karl F.
A NEW METHOD OF MAGNETIC OXYGEN-ANALYSIS. [1962] 9p. (figs. refs. omitted).
Order from SLA $1.10 62-20061

Trans. of Z[eitschrift für] Angew[andte] Phys[ik] (West Germany) 1951, v. 3, p. 300-303.
Other translations are available from SLA as no. 3313, 12p. and I-370, AEC-tr-1749, 7p.

DESCRIPTORS: *Gas analysis, *Oxygen, *Magnetic fields, Pressure, *Laboratory equipment, Design.

The paper describes a new method of magnetic oxygen-analysis based upon the direct measurement of the pressure effects which can be produced in a paramagnetic gas by a modulated non-homogeneous magnetic field. With a slight modification it may also be used to measure the difference in oxygen content of two gases. It permits measurements of oxygen contents with ranges between 0-1% and 0-100% within a few seconds and with virtual independence of the other properties of the gas mixture. (Author)

Mizuno, Takashi and Kimpyo, Tadao.
FREE SUGARS AND THE CONSTRUCTIVE SUGARS OF GLYCOSIDES IN GREEN LEAVES OF JAPANESE BRIGHT YELLOW TOBACCO. Pt. 1 of [A Study of] the Carbohydrates of Tobacco. [1962] 10p. 24 refs.
Order from SLA $1.10 62-20219

Trans. of Nihon Nogei-Kagakkai Shi (Japan) 1957, v. 31, no. 5, p. 297-299.

DESCRIPTORS: *Polysaccharides, Carbohydrates, Synthesis, *Glycosides, *Tobacco, Chemical analysis.

Free sugars of green tobacco leaves (Bright Yellow variety) were shown to be fructose (3.05%), glucose (2.58%), sucrose (6.05%), maltose (0.47%), raffinose (0.31%), stachyose (0.18%) and inositol (0.28%). Mannose, glucose, galactose, rhamnose and smaller quantities of xylose, fructose and desoxyribose were shown to be the constructive sugars of glucosides of green tobacco leaves. (Author)
(See also 62-18832)

Shchukarev, S. A., and Semenov, G. A.
MASS-SPECTROMETRIC STUDY OF THE COMPOSITION OF THE VAPOR ABOVE OXIDES OF THE RARE EARTH ELEMENTS. [1962] [5]p. 8 refs.
Order from OTS or SLA $1.10 63-13714

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 141, no. 3, p. 652-654.

DESCRIPTORS: *Mass spectroscopy, Vapors, Oxides, Chemical analysis, *Rare earths, Spectrum analyzers, Gas ionization, Ionization potentials.

Shogam, S. M., Efimenko, I. A. and others.
CHROMATOGRAPHIC ANALYSIS OF INDUSTRIAL HEPTACHLOR. [1962] 5p. 11 refs.
Order from OTS or SLA $1.10 63-10614

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1962, v. 17, no. 2, p. 260-262.

DESCRIPTORS: *Chromatographic analysis, *Insecticides, *Chlordan, Chemical analysis, Cyclopentanes, Diene synthesis, *Hexachlorocyclopentadiene.

A quantitative method was developed for the determination of heptachlor and its impurities by means of liquid adsorption chromatography. KSK, MSK and ShSk silica gels were used as adsorbents, and petroleum ether with the boiling temperature of 70° to 100° and 40° to 60° was used as a solvent. The following succession of isolation of the components of the chromatographic column were established: octachlorocyclopentane, hexachlorocyclopentadiene, chlordene and then heptachlor, nonachlor and chlorindan. Certain samples of industrial heptachlor contain a compound which separates on chromatographing after heptachlor before nonachlor. It corresponds to the formula $C_{10}H_4Cl_8$. The melting temperature of this compound is 98°. (Author)

Stromberg, A. G.
INFLUENCE OF: ELECTROLYSIS TIME, OF THE VOLUME OF THE SOLUTION, AND OF THE RADIUS OF THE MERCURY DROP ON THE HEIGHT OF THE ANODIC PEAK IN AMALGAM POLAROGRAPHY. [1962] 8p. 12 refs.
Order from OTS or SLA $1.10 63-10736

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1962, no. 5, p. 76-80.

DESCRIPTORS: *Polarographic analysis, *Electrolysis, Volume, Solutions, *Mercury, Time, Anodes (Electrolytic cell), Ions, Quantitative analysis.

The aim of the present investigation is a quantitative interpretation of the experimental facts related to the influence of the electrolysis time (t), the volume of the solution (V_1), and the radius of the mercury drop (r) on the height of the anodic peak, by calculating the change of concentration of the given ions in the solution during the course of their preliminary electrolytic concentration (accumulation) on the mercury drop. It is usually assumed that only a very small part of the substance in solution concentrates on the mercury drop. Hence, the concentration of the material in the solution remains practically unchanged at the end of the electrolysis. This leads to an apparent discrepancy between the experimental data concerning the influence of the three above mentioned factors, and the expected theoretical relations.

Thurn, H.
NUCLEAR RESONANCE MEASUREMENTS WITH POLYETHYLENE. [1962] [48]p. 52 refs.
Order from SLA $4.60 62-18649

Trans. of Kolloid Zeitschrift (West Germany) 1961, v. 179 [no. 1] p. 11-29.

DESCRIPTORS: *Polyethylene plastics, Crystallization, Molecular structure, *Nuclear resonance, Absorption spectrum, *Resonance absorption.

The temperature curves of half-widths, immobile fractions, 2nd moment, 4th moment and (4th moment) $^{1/4}$/(2nd moment) $^{1/2}$ were determined for different polyethylenes as a function of the degree of branching and of the limiting viscosity. Results are discussed. In the case of linear and branched polyethylenes crystallized from a xylene solution, the molecular mobility is strongly inhibited in the amorphous regions compared to a sample which had been crystallized from a melt. (Author)

Wacek, A. v. and Zeisler, F.
DETERMINATION OF TRACES OF ALCOHOL IN VERY DILUTE AQUEOUS SOLUTIONS. [1962] 9p. 4 refs.
Order from SLA $1.10 62-20125

Trans. of Mikrochim[ica] Acta (Austria) 1955, no. 1, p. 29-36.

DESCRIPTORS: Determination, *Alcohols, Water, Solutions, *Microanalysis, Test equipment, Ethanol, Methanol.

Wahl, R.
CARBOHYDRATE DERIVATIVES IN TOBACCO AND IN SMOKE. [1962] 17p. 9 refs.
Order from SLA $1.60 62-20239

Trans. of Tabak-Forschung (West Germany) 1957, v. 22, p. 61-64.

DESCRIPTORS: *Carbohydrates, Organic compounds, *Tobacco, *Smokes, *Cigarettes, Oxidation-reduction reactions, Spectrographic analysis, Paper chromatography, *Glyoxatic acid.

An account is given of the detection of carbohydrate derivatives which are regarded as oxidation products of the triose-reductone, identified as glycol aldehyde and glyoxalic acid. Glyoxalic acid was identified by a spectrophotometric as well as by a paper chromatographic method, and also by chemical means. Possible mechanisms for the formation of the reductone are discussed, and model experiments (browning reactions) were carried out, which were evaluated by paper chromatography. The paper chromatograms on hydrophotised (acetylated) paper are reproduced. Methylglyoxal and reductic acid were found in cigarette smoke, and their identification is described. Reductic acid is regarded as a derivative of the pectine substances which occur in tobacco. (Author)

Inorganic Chemistry

METHOD FOR THE PREPARATION OF SILICO-PHOSPHORIC ACID. [1962] 5p.
Order from OTS or SLA $1.10 62-18513

Trans. of French patent 1,282,253, 11 Dec 61, appl. no. 849,088, 7 Jan 61, by Farbwerke Hoechst A. G., German appl. no. F 30,236, 7 Jan 60 (pub. in Bulletin Officiel de la Propriété Industrielle (France) 1962, no. 3).

DESCRIPTORS: *Silicon compounds, *Phosphoric acids, Synthesis (Chemistry), Organic solvents, Heat treatment.

The invention comprises a method of preparation of crystalline, water soluble silico-phosphoric acid in the form of a free-flowing powder and containing SiO_2 and P_2O_5 in a molecular ratio of one by reacting finely divided silicic acid with highly concentrated phosphoric acid, the molecular ratio of SiO_2 to P_2O_5 being between 0.3 and 1.5, preferably 0.5, and by subsequent ageing of the reaction mixture at a temperature between 50° and 300°, preferably between 80° and 180°, a method according to which the reaction mixture, after ageing, is separated and freed from its excess and unreacted phosphoric acid by use of an organic solvent which is inert with respect to silico-phosphoric acid, after which the reaction mixture is dried; and a particular manner of carrying out the above method, according to which the reaction product (free from excess or unreacted phosphoric acid) is subjected to a supplementary heat treatment at temperatures between 100° and the melting point of the material to obtain thus a hydrolyzable product whose rate of solution is reduced. (Author)

Flahaut, Jean, Domage, L., and Kamsu Kom, J.
A NEW TYPE OF CHEMICAL COMPOUND: THE METALLIC SULFOBORIDES. 21 June 62, 4p. 1 ref.
Order from SLA $1.10 62-18781

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1962, v. 254, p. 299-301 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Copper compounds, *Silver compounds, *Sulfides, *Borides, Synthesis, Chemical analysis, Chemical properties, Physical properties, Crystal structure, Metallic compounds.

The preparation of two sulfoborides, CuBS and AgBS, and a description of their chemical and physical properties are reported. These compounds show a great inertness towards acids, with the exception of nitric, and are readily dissociated by heating in a vacuum. CuBS exists in two crystal modifications: one cubic, stable up to about 1150°C, and the other tetragonal, stable at high temperatures. (Author)

Martin, H. and Jacobsen, T.
THE FORMATION OF NO_3Cl IN REACTIONS BETWEEN CHLORINE DIOXIDE AND NITROGEN OXIDES. 24 July 61, 2p. 4 refs.
Order from SLA $1.10 63-10620

Trans. of Angewandte Chemie (West Germany) 1955, v. 67, no. 17/[18] p. 524.

DESCRIPTORS: *Chlorides, Dioxides, Oxides, *Nitrogen compounds, Chemical reactions.

Nisel'son, L. A., Petrusevich, I. V. and others.
OBTAINIGN ELEMENTAL BORON BY HYDROGEN REDUCTION OF BORON HALIDES. 17 Jan 63 [11]p. 12 refs. FTD-TT-62-1638; AD-298 238.
Order from OTS or SLA $1.60 63-19076

Unedited rough draft trans. of #Zhurnal Prikladnoi Khimii (USSR) 1962, v. 35, no. 5, p. 984-989.

DESCRIPTORS: *Boron, Production, Boron compounds, Halides, Bromine, *Reduction (Chemistry), Hydrogen, Reaction kinetics, *Towers (Chemistry).

In this study of the kinetics of hydrogen reduction of boron halides on a heated surface, regions of formation of various modifications of boron as a function of temperature and the ratio H_2: BBr_3 were determined. (Author)

Paderno, Yu. B., Fomenko, V. S., and Samsonov, G. V.
SYNTHESIS AND PROPERTIES OF PURE NEODYMIUM HEXABORIDE. [1962] 2p. (refs: table omitted) 6 refs.
Order from OTS or SLA $1.10 62-18729

Trans. of Ukrainskii Khim[icheskii] Zhurn[al] (USSR) 1960, v. 26, no. 4, p. 409-411.
An abstract trans. is available from LC or SLA mi$1.80, ph$1.80 as 61-15027, AID-60-79, 4 Nov 60, 2p.

DESCRIPTORS: *Heat resistant materials, *Neodymium compounds, *Borides, Synthesis (Chemistry), Physical properties.

For abstract see Technical Translations 5: 231, 1961.

Organic Chemistry

Al'tshuler, O. V., Vinogradova, O. M. and others.
PRODUCTION OF HIGH-PURITY HYDROCARBONS BY MEANS OF HEAT DISPLACING CHROMATOGRAPHY. [1962] 6p. 3 refs.
Order from OTS or SLA $1.10 62-20389

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 140 [no. 6] p. 1307-1309.

DESCRIPTORS: *Hydrocarbons, Production, *Chromatographic analysis, Heat treatment, Adsorption, Material separation, Propenes, Propanes.

Adsorption in chromatographic columns with subsequent heating was studied as a preparative method for pure compounds, by the example of propylene. Silica gels and alumina gels at 20 to 30 C were charged with hydrocarbon mixtures, containing 25-98% propylene, then heated at 200-220 C for separation by zones of the successively adsorbed and desorbed components. Thus,

the final propylene contained only 0.0003-0.0004% of propane, even from very poor mixtures. Also other components, for example propane, were simultaneously separated in pure state. Preliminary data exist on a successful separation of high-boiling compounds (benzene-cyclohexane). (Author)

Andrianov, K. A. and Rumba, G. Ya.
THE CATALYTIC POLYMERIZATION OF HEXAMETHYLCYCLOTRISILAZANE AND OCTAMETHYLCYCLOTETRASILAZANE. 28 Sep 62, 7p. 5 refs.
Order from OTS or SLA $1.10 63-10082

Trans. of Vysokomolekul[yarnye] Soedin[eniya] (USSR) 1962, v. 4, p. 1060-1063.

DESCRIPTORS: *Polymerization, *Methyl radicals, *Silicon compounds, *Nitrogen compounds, Polymers, Methanes, Catalysis, Synthesis.

The reactions of hexamethylcyclotrisilazane and octamethylcyclotetrasilazane in the presence of alkali were studied, and it was shown that the reaction is accompanied by the evolution of methane and formation of "cyclolinear" polymers. Polymers with molecular chains containing the Si-N-Si bond, with m.p. up to 500°, and good solubility in benzene were synthesized. (Author)

Andrianov, K. A. and Rumba, G. Ya.
TRANSAMINATION REACTIONS OF POLYMETHYLCYCLOSILAZANES WITH ANILINE. 25 Sep 62, 8p. 1 ref.
Order from OTS or SLA $1.10 63-10081

Trans. of #Zhur[nal] Obshchei Khim[ii] (USSR) 1962, v. 32, p. 1993-1997.

DESCRIPTORS: Chemical reactions, *Methyl radicals, *Anilines, Polymers, *Silicon compounds, *Nitrogen compounds, Synthesis, Ammonia.

The transaminations of hexamethylcyclotrisilazane and octamethylcyclotetrasilazane with aniline were studied, and it was shown that replacement of an -NH- by a C_6H_5N group is accompanied by transformation of the eight-membered to a six-membered ring. N-Phenylhexamethylcyclotrisilazane was synthesized by the re action of ammonia and aniline with dichlorodimethylsilane. (Author)

Balandin, A. A., Klabunovskii, E. I., and Litvin, E. F.
COMPOSITION OF THE BUTENES, FORMED DURING CATALYTIC DEHYDRATION OF BUTANOL-2. [1962] 10p. 21 refs.
Order from OTS or SLA $1.10 63-10238

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 10, p. 1863-1870.
Another trans. is available from ATS $12.00 as ATS-42P59R [1962] 9p.

DESCRIPTORS: *Butanols, *Dehydration, Catalysts, Catalysis, *Butenes, Production, Chemical properties.

The composition of the buylenes, formed during dehydration of butanol-2 on Al_2O_3(315-445 C) and on copper catalysts (450-590 C) was studied by gas-liquid chromatography. The cis-2-butene is predominently formed on alumina, while the trans-2-butene-on the copper catalysts. A possible mechanism of the catalytic dehydration of butanol-2 and of formation of the isomeric butenes was discussed. (Author)

Bernauer, Klaus and Fallab, S.
PHTHALOCYANINE IN AQUEOUS SOLUTION, [PT.] I. [1962] 11p. 17 refs.
Order from SLA $1.60 62-18725

Trans. of Helvetica Chimica Acta (Switzerland) 1961, v. 44, no. 5, p. 1287-1292.

DESCRIPTORS: *Complex compounds, *Phthalocyanines, *Sulfonates, Zinc compounds, Cobalt compounds, Copper compounds, Spectrographic analysis.

The behavior of metal free phthalocyanine-tetrasulfonate and some metal derivatives in aqueous solution has been investigated. It was found that most of these compounds dimerize in diluted aqueous solution. The stabilities of these dimers have been determined by spectrophotometric measurements.

Bogomol'nyi, V. Ya., Erusalimskii, B. L., and Pokrovskii, E. I.
RELATIVE ACTIVITY OF THE FREE RADICALS $CH_3^{\cdot}$ AND $(CH_3)_3CO^{\cdot}$ IN THE REACTION OF H-ATOM SEPARATION FROM HYDROCARBONS. Pt. 18 of Reactions of Free Radicals in Solutions. [1962] 10p. 19 refs.
Order from OTS or SLA $1.10 62-18893

Trans. of #Zhur[nal] Obshchei Khim[ii] (USSR) 1961, v. 31 [no. 8] p. 2675-2682.

DESCRIPTORS: *Free radicals, *Methyl radicals, *Alkoxy radicals, Chemical reactions, *Photolysis, Solutions, Hydrocarbons, Phenyl radicals, Nitrogen compounds, Butyl radicals, Peroxides, Heptenes, Styrenes, Isoprene, Benzenes.

On the basis of a study on the products of methylphenyltriazene and ditertiary-butylperoxide photolysis in different hydrocarbons, the relative activity of the free radicals CH_3 and $(CH_3)_3CO$ was compared in temperature intervals from 20° to -60°C. (Author) (See also 61-10355)

Borisov, P. P. and Shuikin, N. I.
REPORTS OF INVESTIGATIONS CARRIED OUT BY N. D. ZELINSKII ON THE CATALYTIC AROMATIZATION OF PETROLEUM. [1962] 5p. 33 refs.
Order from OTS or SLA $1.10 63-10365

Trans. of Neftyanoe Khozyaistvo (USSR) 1934, v. 26, no. 3, p. 42-43.

DESCRIPTORS: *Reports, Scientific research, *Petroleum, *Catalysis, Platinum catalysts, Nickel catalysts, Benzenes, Toluenes, *Hydrocarbons, Dehydrogenation.

Broich, Franz.
OXIDATION REACTIONS IN PETROCHEMISTRY. [1962] [72]p. (tables omitted) 98 refs.
Order from SLA $7.60 62-18671

Trans. of Chemie-Ing[enieur]-Techn[ik] (West Germany) 1962, v. 34, no. 1, p. 45-61.

DESCRIPTORS: *Petroleum, *Oxidation, Peroxides, Reaction kinetics, Catalysis, *Butanes, Cumenes, Toluenes, Anthracenes, *Aldehydes, *Ethylenes, Methanes, Ethanes, Propanes, *Benzenes, Naphthalenes, Xylenes, Ammonia, *Acrylonitriles, Stabilization, *Oxidation inhibitors, Bibliography, Hydrocarbons

Starting with the increasing importance of oxidation processes for the production of a large number of highly significant basic materials, the theory of oxidation in the liquid and in the gas phases is discussed first. The individual processes for the most essential groups are then explained on the basis of raw materials (paraffins, olefins, hydroaromatics, aromatics) used in both methods and are described in greater detail with an example each for the liquid phase oxidation (butane oxidation to acetic acid) and the gas phase oxidation (ethylene to ethylene oxide). In contrast to the desired oxidation, we have the undesirable attack by oxygen which is also of great industrial significance (for example, for plastics and rubber). This offers the opportunity for a concluding discussion of the essential theories and general methods of inhibition and stabilization. The prospects indicate the fields of the chemical industry which will be involved by the products obtained from the oxidation processes. (Author)

Bykov, A. N.
SYNTHESIS AND STUDY OF SOME COLOURED POLYAMIDES. 11 Apr 62, 6p. 3 refs. T. 1353; [DSIR] NLL M. 8839.
Order from OTS or SLA $1.10 62-32816

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 9, p. 1307-1310.
Another trans. is available from ATS $7.10 as ATS-13P59R [1962] 4p.

DESCRIPTORS: *Amides, Polymers, Synthesis, Colors.

New coloured polyamides are synthesised from azobenzenecarboxylic acids and hexamethylene diamine, and also from sebacic acid and coloured diamines. Their properties are studied. The polycondensation of sebacic acid with coloured aromatic diamines yields an intensely coloured polyamide which is almost devoid of fibre-forming properties. The partial addition of the coloured aromatic diamine together with the colourless fatty diamine during their polycondensation with the dicarboxylic acid enhances the m. p., the fibre-forming properties and tones down the colour intensity of the coloured polyamide. (Author)

Fileti, M.
CONVERSION OF SCATOLE TO INDOLE AND PREPARATION OF INDOLE. [1962] 4p.
Order from K-H $5.00 K-H-12178-b

Trans. of Gazetta Chimica Ital[iana] 1883, v. 13, p. 378-381.

DESCRIPTORS: *Indoles, Methyl radicals, Synthesis (Chemistry).

Gnehm, R. and Forrer, K.
PREPARATION OF A TOLUOL DISULPHONIC ACID. 29 Oct 62, 4p. 8 refs.
Order from SLA $1.10 62-20464

Trans. of Chemische Berichte (Germany) 1877, v. 10, p. 542-544.

DESCRIPTORS: *Barium compounds, *Toluenes, *Sulfonic acids, Salts, Synthesis (Chemistry).

Hank, Rudolf.
THE SOLUBILITY OF REDOX POLYMERISATES OF ACROLEIN. [1962] [13]p. 15 refs.
Order from SLA $1.60 62-18670

Trans. of Makromolekulare Chemie (Switzerland) 1962, v. 52, 18 Apr, p. 108-119.

DESCRIPTORS: *Acroleins, Polymerization, *Solubility, Oxidation-reduction reactions, Polymers, Viscosity, Decomposition, *Organic solvents.

Hartmann, Helmut.
PROCESS FOR THE PRODUCTION OF ALIPHATIC HYDROXY COMPOUNDS. [1962] 17p. 2 refs.
Order from OTS or SLA $1.60 62-18657

Trans. of German patent 1,121,615, H 30661 IVb/12o, cl. 12o 27, internat. cl. C 07 c, appl. 18 July 57, by Henkel und Cie., G. m. b. H.

DESCRIPTORS: *Aliphatic compounds, *Hydroxides, Synthesis (Chemistry), *Carboxylic acids, Esters, Catalysts, Sulfuric acid, Chlorine compounds, *Fatty acids, Linoleic acid.

A process for the production of aliphatic hydroxy compounds by the addition of carboxylic acids to olefinic unsaturated aliphatic compounds and saponification of the formed ester compound, is described. The ester compounds to be saponified are prepared by addition of a practically water-insoluble aliphatic carboxylic acid containing at least 6 carbon atoms in the molecule to an unsaturated carboxylic acid or its ester, to the carboxylic acid ester of an unsaturated alcohol and/or their mixtures, or to an unsaturated ether, at a temperature between 40° and 200° C in the presence of sulfuric acid, perchloric acid, hydrofluoroboric acid and/or boron fluoride dihydrate as catalysts, whereby the aliphatic olefinic compounds utilized as starting compounds contain at least 6 carbon atoms in the molecule. Fatty acid mixtures containing larger amounts of linoleic acid are treated at a temperature between 40° and 100° C in the presence of perchloric acid or boron fluoride dihydrate as catalyst. (Author)

Ipatiev, V. N.
DEHYDRATION OF CYCLIC ALCOHOLS. [1962] 2p.
Order from SLA $1.10 63-10689

Trans. of [Chemische] Ber[ichte] (Germany) 1910/1911, v. 43, p. 3384.

DESCRIPTORS: Dehydration, *Alcohols, Synthesis, Molecular isomerism, Methanes.

Karzhev, V. I., Kasatkin, D. F. and others.
EXTRACTION OF AROMATIC HYDROCARBONS WITH PROPYLENE-CARBONATE. [1962] 5p. 9 refs.
Order from OTS or SLA $1.10 63-10240

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961 [v. 6] no. 4, p. 6-9.

DESCRIPTORS: *Hydrocarbons, Separation, *Solvent extraction, Propenes, Carbonates, Gylcols, Ethylenes, Solvent action.

Possibility of application of propylene carbonate, as solvent in extraction of C_6-C_8 aromatic hydrocarbons from their mixtures with naphthenic and paraffinic hydrocarbon, was shown. It was found, that propylene carbonate at room temperature, in one step, assures a higher extraction degree of light aromatic hydrocarbons, than the diethylene-glycol. The effect of quantity of the solvent of starting content in aromatic hydrocarbons of the raw-material and of an addition of paraffinic hydrocarbons on the extraction degree and selectivity was studied. (Author)

Nametkin, S. S. and Pokrovskaya, E. S.
INVESTIGATION OF THE REACTION PRODUCTS FROM THE CONDENSATION OF BENZENE WITH CYCLOPENTENE IN THE PRESENCE OF ALUMINUM CLORIDE. [1962] [3]p.
Order from OTS or SLA $1.10 63-10413

[Condensed] trans. of Zhurnal Obshchei Khimii (USSR) 1938, v. 8, p. 685-713.

DESCRIPTORS: *Condensation reactions, *Benzenes, *Cyclopentenes, *Aluminum compounds, *Chlorides, Physical properties.

Natta, G. and Pino, P.
A COMPARISON OF THE SYNTHESIS OF ESTERS FROM ACETYLENE AND ETHYLENE BY REACTION WITH CARBON MONOXIDE AND ALCOHOLS. Paper presented at the Congress of Industrial Chemistry (no. 23) Paris, Nov 51. [1962] [12]p. 8 refs.
Order from SLA $1.60 62-20049

Trans. of [la] Chimica e [l]Industrial (Italy) 1952, v. 34, p. 449-453.

DESCRIPTORS: *Esters, Synthesis (Chemistry), *Acetylenes, Alcohols, Methanol, Carbon compounds, Monoxides, Ethylenes, *Acrylic acid esters, *Fatty acid esters, Ketones

In continuation of their studies of the reaction between acetylene, carbon monoxide, and alcohols the authors compare the synthesis of esters and diesters from acetylene with the analogous synthesis of esters from the olefins, and examine the effect of the reaction conditions on the composition of the products. The reactions are very similar with respect to the operating conditions, but in the case of acetylene the reaction can take place at a lower temperature than with the olefins even if the acetylene concentrations are low. In both cases the ester synthesis may be accompanied by the formation of ketonic products. In addition to the synthesis of the esters of succinic, fumaric and acrylic acid previously described by the authors, the formation of γ-ketopimelic acid esters has also been observed. (Author)

Plotnikov, Yu. N., Smironov, V. C. and others.
DEHYDROGENATION OF n-ALKANES ON OXIDE CATALYSTS IN A FLUIDIZED BED. [1962] 9p. 14 refs.
Order from OTS or SLA $1.10 63-10228

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2, no. 2, p. 267-272.

DESCRIPTORS: *Alkanes, Hexanes, Nonanes, *Dehydrogenation, Aluminum compounds, Chromium compounds, Potassium compounds, Oxide, Catalysts, Catalysis, Fluidized solids, Hydrocarbons.

Dehydrogenation of n-hexane and n-nonane was investigated in fluidized beds of alumina-chromia, alumina-chromia-potassia, and also of K-5 catalysts, as function of temperature, space velocity and experiment duration. Dehydrogenation occurs selectively under proper conditions on the alumina-chromia catalyst, with yields of alkenes up to 10%, without accompanying cracking or aromatization. Under same conditions the alumina-chromia-potassia catalyst gives a greater quantity of alkenes, but an important part of them are lowmolecular alkenes. In addition, aromatization occurs to a notable degree. In the presence of industrial catalyst K-5 aromatization is practically stopped, but cracking occurs in addition to dehydrogenation, which gives alkenes of different molecular weights. (Author)

Sabatier, Paul and Mailhe, A.
CATALYTIC DOUBLE DECOMPOSITION OF THE MONOCHLORINATED DERIVATIVES OF METHANE IN CONTACT WITH ANHYDROUS METALLIC CHLORIDES. 19 Nov 62, 5p. 1 refs.
Order from SLA $1.10 63-10109

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1905, v. 141, p. 238-241 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: Catalysis, Decomposition, *Methanes, *Chlorides, Hydrochloric acid, Metals, Hydrocarbons, Chemical reactions.

Saito, Tokuji.
METHOD OF PRODUCING HEXAMETHYLENE DIAMINE. [1962] 4p.
Order from OTS or SLA $1.10 62-18659

Trans. of published Japanese patent 217/62, 1 Jan 62, appl. no. 31739/59, 9 Oct 59, by Dainippon Ink Manufacturing Co., Ltd.

DESCRIPTORS: *Amines, Methyl radicals, Production, Acroleins, Aldehydes, Ammonia, Hexanes.

The production of hexamethylene diamine is characterized by the fact that hydroxyadipoaldehyde is formed from acrolein through its dimer by conventionally known methods and the hydroxyadipoaldehyde product obtained may be purified or may not be purified, and then is brought into contact with ammonia and addition of hydrogen is carried out under pressure. (Author)

Shostakovskii, M. F., Sidel'kovskaya, F. P., and Shapiro, E. S.
POLYMERIZATION OF VINYL ISOPROPYL AND VINYL CYCLOHEXYL ETHERS UNDER THE INFLUENCE OF 2,2'-AZOBIS [ISOBUTYRONITRILE]. [1962] [7]p. 7 refs.
Order from OTS or SLA $1.10 62-20137

Trans. of #Akad[emiya] Nauk [SSSR]. Otdel[enie] Khim[icheskikh] Nauk. Izvestiya, 1955 [no. 5] p. 1085-1089.

DESCRIPTORS: *Vinyl radicals, Propyl radicals, Hexynes, *Ethers, Free radicals, *Polymerization, Catalysts, Butyl radicals, *Nitriles.

The free-radical polymerization of vinyl cyclohexyl and vinyl isopropyl ether under the influence of 2,2'-azobis [isobutyronitrile] has been investigated. It has been shown that the yield and the molecular weight of the polymers depends upon the polymerization conditions and on the structure of the ether. (Author)

Shostakovskii, M. F. and Bogdanova, A. V.
TRANSFORMATION OF VINYL ARYL ETHERS. II. RADICAL POLYMERIZATION AND COPOLYMERIZATION OF VINYL ARYL ETHERS [Issledovanie v Oblasti Prevrashchenii Vinilarolivykh Efirov]. [1962] 9p. 7 refs.
Order from OTS or SLA $1.10 62-20098

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1954, no. 5, p. 919-923. Another trans. is available from CB.

DESCRIPTORS: *Vinyl radicals, *Ethers, *Phenyl radicals, *Butyl radicals, *Polymerization, *Copolymerization, Polymers, Free radicals.

The possibility of polymerizing and copolymerizing vinyl aryl ethers under the influence of a free-radical activator -- 2,2'-azobis[isobutyronitrile] -- has been demonstrated. It has been shown that under the influence of this activator vinyl aryl ethers can be made to copolymerize with vinyl alkyl ethers. The polymers of vinyl phenyl and vinyl-p-tertiary-butyl phenyl ether, and also their copolymers with vinyl ethyl and vinyl butyl ether have been isolated and their properties described. A probable mechanism of their formation has been proposed. It has been found that in the copolymerization reaction the vinyl aryl ethers display greater reactivity than the vinyl alkyl ethers. (Author)

Siroky, Lubomir.
CONCERNING THE OCCURENCE OF SOME ORGANIC HYDROGEN-FREE ACIDS IN THE PRODUCTION OF CITRIC ACID. [1962] 7p. (figs. omitted) 12 refs.
Order from SLA $1.10 63-10670

Trans. of Chem[ische] Techn[ik] (East Germany) 1962, v. 14, no. 8, p. 469-471.

DESCRIPTORS: Organic acids, *Citric acids, *Fermentation, Crystallization, Chemical precipitation, Chromatographic analysis.

Stepukhovich, A. D. and Tschaikin, A. M.
KINETICS AND MECHANISM OF HYDROCARBON DECOMPOSITION. III. KINETICS AND MECHANISM OF BUTANE AT LOW PRESSURES IN PRESENCE OF ISOBUTYLENE AND PROPYLENE AS RETARDANTS. [1962] 10p. (figs. tables formulae refs. omitted).
Order from OTS or SLA $1.10 62-20340

Trans. of Zhurnal Fiz[icheskoi] Khimii (USSR) 1953, v. 27, no. 12, p. 1737-1747.

DESCRIPTORS: *Hydrocarbons, Decomposition, *Butanes, *Propenes, Reaction kinetics, Chemical reactions, Inhibition.

See also 62-14856.

Stange, Hugo, Tuemmler, William Bruce, and Allen, James Forrest.
PROCESS OF PREPARATION OF ALLYL ESTERS OF DIACIDS. [1962] 11p.
Order from OTS or SLA $1.60 62-20114

Trans. of French patent 1,281,774, file no. 854,150, internat. cl. C 07 c, appl. 28 Feb 61, granted 4 Dec 61, applications filed in U.S., no. 18,508, 30 Mar 60 and no. 18,514, 30 Mar 60 (pub. in [Bulletin Officiel de la Propriété Industrielle] (France) 1962, no. 2).

DESCRIPTORS: Acids, *Phthalic acids, *Allyl radicals, *Esters, Esterification.

The invention concerns a production process of a diallyl phthalate in one operation from a phthalic acid and an allyl halide, consisting of reacting one molecule of a phthalic acid with one molecule of sodium carbonate and two molecules of allyl halide in a single operation, in the presence of a catalytic quantity of a tertiary amine or a quaternary ammonium salt under generally anhydrous conditions, which directly result in the diallyl phthalate. (Author)

Sterligov, O. D. and Belen'kaya, A. P.
EFFECT OF THE COMPOSITION OF Al_2O_3-Cr_2O_3-K_2O CATALYSTS ON THEIR ACTIVITY IN THE DEHYDROGENATION OF ISOPENTANE. 5 Nov 62, 11p. 9 refs.
Order from OTS or SLA $1.60 63-10085

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1962 [no. 5] p. 800-805.

DESCRIPTORS: *Pentanes, *Dehydrogenation, Aluminum compounds, Chromium compounds, Potassium compounds, Oxides, *Catalysts, *Catalysis.

The catalytic properties of Al-Cr-K catalysts with various compositions' were studied for the dehydrogenation of isopentane to isoamylenes. The catalytic and some other properties of the Al-Cr-K catalysts studied were compared with their texture and structure. The most active Al-Cr-K catalysts were those samples containing 9% to 17% Cr_2O_3 and 2% to 3% K_2O, and having the smallest pore diameters (38 to 45 Å) and highest specific surface area (175 to 183 sq. m./g). The spinel-structure phase is catalytically more active than the corundum phase in the dehydrogenation of isopentane to isoamylenes. The maximum activity of Al-Cr-K catalysts for the dehydrogenation of isopentane to isoamylenes coincides with their maximum strength. (Author)

Ziegler, Karl.
ETHYLENE POLYMERIZATIONS. [1962] 14p. 2 refs.
Order from SLA $1.60 62-20123

Slightly abridged trans. of Brennstoff-Chemie (West Germany) 1954, v. 35, no. 21/22, p. 321-325.
Another trans. is available from SLA as I-878, 19p.

DESCRIPTORS: *Polyethylene plastics, Synthesis (Chemistry), *Ethylenes, Polymerization, *Ziegler catalysts, Complex compounds, *Aluminum compounds, Alkyl radicals, Butenes, Statistical distributions.

Topics include: Aluminum alkyls as aids in synthesis; "Growth" and "Removal", two contrasted reactions between aluminum alkyls and ethylene; dimerisation of ethylene to butene-(1); synthesis of higher α-olfines; statistical and non-statistical polymerisation; and, higher olefines as raw materials for polymerisation.

Physical Chemistry

PROCESS FOR COVERING A METAL OBJECT WITH A COATING OF ANOTHER METAL. [1962] 6p.
Order from OTS or SLA $1.10 63-10268

Trans. of Dutch patent 84,445, issued 15 Mar 57, pub. 16 Feb 57, appl. 166,127, filed 18 Dec 51, pub. 15 Oct 56, by The Tainton Co., Baltimore (U.S.A.).

DESCRIPTORS: *Metal coatings, Metals, Solids, *Plating, Powder metals, Chemical compounds.

According to this invention, a metal object is covered with a layer of metal by treating in a drum, with or without balls, with a powder of the coating material, with the distinction that the drum treatment takes place wet in a fluid medium, to which is added an organic, water-soluble, non-oxidizable, cation-bearing or non-ionogen surface-active substance. By this addition, the surface of the particles of coating material is protected against oxidation, and a fast-adhering metal layer can be obtained in the desired thickness.

Andreeva, O. I. and Kostikova, G. I.
STUDY OF CARBON-ISOTOPE EXCHANGE REACTIONS BETWEEN POTASSIUM CYANIDE AND SOME CARBONATES, AND THEIR USE FOR OBTAINING C^{14}-LABELLED POTASSIUM CYANIDE. [1962] [12]p. 6 refs.
Order from OTS or SLA $1.60 62-20221

Trans. of mono. [International Atomic Energy Agency Symposium] Radioisotopes in the Physical Sciences and Industry, n.p., 1962, v. 3, p. 111-122.

DESCRIPTORS: *Exchange reactions, *Isotopes, *Carbon, *Cyanides, *Potassium compounds, *Carbonates, Labeled substances, Chemical reactions, Temperature, Sodium compounds, Barium compounds, Ammonia, Reaction kinetics.

The carbon-isotope exchange reactions between potassium cyanide and lithium, sodium, potassium and barium carbonates were studied. It was established that exchange in the system KCN-$BaCO_3$ started at 650° and was complete at 800° in the course of two hours. Exchange in the systems KCN-M_2CO_3 (where M is Li, Na, K) started at 500° to 550° and reached 100% for Li_2CO_3 at 650° and for sodium and potassium carbonates at 700°. The rate constants for the isotope exchange reactions were determined and the magnitude of the apparent activation energy was calculated. For the system KCN-$BaCO_3$ this was ~45 kcal./mole, for KCN-Na_2CO_3 and KCN-K_2CO_3 - ~32 kcal./mole, for KCN-Li_2CO_3 - ~27 kcal./mole. The conditions for the preparation of C^{14}-labelled potassium cyanide were determined using isotope exchange with subsequent separation of potassium cyanide from the carbonate by means of extraction with liquid ammonia. This way, labelled potassium cyanide was obtained in greater than 90% yield and the percentage of the basic material was greater than 96%. (Author)

Andrussow, L.
THE CATALYTIC OXIDATION OF AMMONIA. III. 31 Aug 62, 26p. 26 refs.
Order from SLA $2.60 63-10104

Trans. of Angew[andte] Chem[ie] (Germany) 1927, v. 40, p. 166-174.

DESCRIPTORS: Catalysis, Oxidation, *Ammonia, Combustion, Chemical reactions, Cyano acids, Diffusion, *Gas flow, Decomposition, Nitrogen.

The previous ammonia oxidation experiments at platinum were extended with oxygen mixtures up to temperatures of 1300°, flow rates of 570 cm/sec, and contact times of millionths of a second. Even at 1200° and above, the nitric oxide yield at three folded platinum wire gauzes can exceed 90%. The dependence of the complete process on the quantity ratio of oxygen to ammonia was investigated, and the important role of counterdiffusion at small gas flow rates, which leads to nitrogen formation in the gas volume before the catalyst, was determined by special experiments. It was attempted to interpret the complex cause of the combustion in the whole of the region studied. The relations of reaction rates and spatial concentration distribution were taken into particular consideration. (Author)

Balandin, A. A.
KINETICS OF CATALYTIC MONOMOLECULAR REACTIONS IN A FLOW SYSTEM, WITH DISCOUNT OF DISPLACEMENT THROUGH ALIEN SUBSTANCES. [1962] 8p. 10 refs.
Order from OTS or SLA $1.10 62-20386

Trans. of Zhur[nal] Obshchei Khim[ii] (USSR) 1942, v. 12, no. 3/4, p. 153-159.
An abstract trans. is available from OTS or SLA $1.10 in 61-20325 [1961] 5p.

DESCRIPTORS: *Reaction kinetics, *Catalysis, Fluids, Pressure, Dehydrogenation, Alcohols, Molecular isomerism.

A kinetic equation was deduced and solved for a general case mentioned in the title (steady state). Some admissible simplifications were examined. Results were applied to a case of increased pressure, to the kinetics of the dehydrogenation of alcohols and to catalytic isomerization. (Author)

Barre, M.
THE SOLUBILITY OF THORIUM SULFATE IN SULFURIC ACID AND IN SOLUTIONS OF LITHIUM SULFATE. [1962] 2p. (figs. tables omitted).
Order from SLA $1.10 62-18675

Trans. of Soc[iete] Chim[ique de France]. Bull[etin] 1912 [ser. 4] v. 11, p. 646-648.

DESCRIPTORS: Solubility, *Sulfates, *Thorium compounds, *Sulfuric acid, *Lithium compounds.

Bering, B. P. and Serpinskii, V. V.
ADSORPTION OF A MIXTURE OF GASES. COMMUNICATION 6. ADSORPTION EQUILIBRIUM IN THE SYSTEM WATER-n. HEPTANE-SILICA GEL. [1962] 9p. 5 refs.
Order from OTS or SLA $1.10 63-10236

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 11, p. 1947-1954.

DESCRIPTORS: Gases, *Adsorption, Steam, Heptanes, Chemical equilibrium, Thermodynamics, Silicon Compounds, Dioxides, Gels, Adsorbents.

Adsorption of steam and n-heptane vapor mixtures was studied on silica-gel and the most important sections of their thermodynamic adsorption surfaces were constructed. Water and n-heptane in the monomolecular region depress very little the mutual adsorption, which occurs in the starting region on different adsorption centers. No noticeable formation of a statistical two-dimensional solution of the two substances occurs, even at small surface coverages. The adsorptive "solution" represents a microheterogeneous system. In the region of great adsorption, values, the capillary condensation of both components occurs in different zones of the adsorbing volume. (Author)

Borisov, P. P., Shachnazarova, E. M., and Margolis, E. E.
THERMAL DECOMPOSITION OF HYDROCARBONS. [1962] 7p. 10 refs.
Order from OTS or SLA $1.10 63-10370

Trans. of Zhurnal Obshchei Khimii (USSR) 1934, v. 4, no. 10, p. 1385-1389.

DESCRIPTORS: *Hydrocarbons, *Pyrolysis, Decomposition, Chemical analysis.

Brunner, R.
THE P-T DIAGRAMS FOR THE SYSTEMS SiO_2 + C AND Al_2O_3 + C. [1962] [20]p. 14 refs.
Order from SLA $1.60 62-20052

Trans. of Schweiz[er] Arch[iv für] Angew[andte] Wiss[enschaft] u[nd] Tech[nik] 1946, v. 12, [no. 6] p. 189-194.

DESCRIPTORS: *Silicon compounds, Dioxides, *Aluminum compounds, Oxides, *Carbon, Phase studies, Thermodynamics, Dissociation, Pressure, Temperature, *Aluminum, Production.

The P-T diagrams of the systems SiO_2 + C and Al_2O_3 + C were completed and corrected. For the system SiO_2 + C, it is shown that up to 2200° the formation of silicon occurs via the two intermediate steps, Si_2C_2O and SiC. For the system Al_2O_3 + C, the dissociation temperature (at atm. pressure) of Al_4C_3 was reduced from 2200° to temperatures below 1430°, which means that in a CO atmosphere there is no stable range for the equilibria:
(I) $2\ Al_2O_3 + 9C \rightleftarrows Al_4C_3 + 6\ CO$ and
(III) $Al_2O_3 + Al_4C_3 \rightleftarrows 6\ Al_{liq.} + 3\ CO$
The discussion of the possibilities of electrothermic aluminum production is reviewed. (Author)

Dybczynski, Rajmund.
CHARACTERISTICS AND EVALUATION OF STRONGLY ALKALINE ANION EXCHANGERS. II. INVESTIGATION OF THERMOSTABILITY (Charakterystyka i Ocena Anionitow Silnie Zasadowych. II. Badanie Odpornosci Termicznej) tr. by W. Kilerski. 1963 [12]p. 12 refs. PL-480 Agr.
Order from OTS $0.50 61-11378

Trans. of Przemysl Chemiczny (Poland) 1959, v. [15]38, no. 4, p. 216-220.

DESCRIPTORS: *Ion exchange resins, Hydroxides, *Heat resistant materials, Stability, Determination, Titration, Heat tolerance

A simple method is given for investigating the thermostability of strongly alkaline anion exchangers, and determining the conditions under which particular exchangers may be employed. (Author)

Efimov, E. A., Erusalimchik, I. G., and Sokolova, G. P.
ELECTROCHEMICAL EVOLUTION OF HYDROGEN ON MICROCRYSTALLINE SILICON IN HYDROFLUORIC ACID SOLUTION. [1962] [8]p. 4 refs.
Order from OTS or SLA $1.10 62-20326

Trans. of #Zh[urnal] Fiz[icheskoi] Khimii (USSR) 1962, v. 36 [no. 5] p. 1005-1009.

DESCRIPTORS: Electrochemistry, *Electrolysis, Fluorides, *Hydrogen, *Silicon, Crystal lattices, Acids, Polarization, Semiconductors, Microstructure.

The electrochemical evolution of hydrogen on p- and n-type silicon is investigated in the current range 2.5×10^{-6} to 5×10^{-2} amp cm^{-2}. Penetration of hydrogen into the silicon lattice during cathodic polarization appears to affect the electrochemical reaction. On the basis of anodic charging curves the formation of a surface compound of silicon and hydrogen may be assumed at a potential of -0.5 V and is involved in the mechanism of hydrogen evolution on silicon. (Author)

Eizner, Yu. E.
CONCENTRATION DEPENDENCE OF MACROMOLECULAR DIMENSIONS IN SOLUTION. [1962] 13p. 24 refs.
Order from OTS or SLA $1.60 62-20382

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 5, p. 748-757.
Another trans. is available from ATS $17.00 as ATS-20N54R [1961] 11p.

DESCRIPTORS: Solutions, *Polymers, *Molecular structure, *Molecular weight, Density, Solvents, Optics, Molecules.

Theory of the concentration dependence of dimensions of flexible macromolecules in good solvents was developed on the basis of the "smoothened segment density" model, account being made for the non-uniform filling of solution volume by segments at high dilutions. The equation $\alpha = \alpha_0 [1 - A_2 M L_1 (\alpha_0) c - A_3 M L_2 (\alpha_0) \cdot c^2 - \ldots]$ was deduced for the expansion coefficient α of the macromolecules; A_i is the virial coefficient, M - the molecular weight, and c - the concentration. Based on the "pearl necklace" model an exact value was obtained for $L_1^{ex}(\alpha_0) = 0.006 (\alpha_0 - 1)$, valid for $\alpha_0 \cong 1$. It was found that the dependence of α upon c has little effect upon the values of A_3. The concentration dependence of the reduced light scattering indicatrix was shown to be determined not only by the effect of intermolecular interference, but also by the change of the indicatrix of an individual macromolecule with concentration. Contribution by both effects may be commensurable. (Author)

Figini, R. V., Coloccia, E., and Schumacher, H. J.
THE KINETICS OF THE THERMAL DECOMPOSITION OF GASEOUS CHLORINE HEPTOXIDE. [1962] 14p.
Order from SLA $1.60 62-20179

Trans. of Zeitschrift für Physikalische Chemie, Frankfurt (West Germany) 1958, neue folge, v. 14, p. 32-48.

DESCRIPTORS: Dynamics, *Pyrolysis, Gases, *Chlorine compounds, *Oxides, Fluorine, *Reaction kinetics.

The thermal decomposition of gaseous Cl_2O_7 between 100° and 120°C. at pressures between 1.5 and 80 mm Hg. in vessels of Pyrex and quartz with and without the addition of oxygen, chlorine and fluorine was investigated. The reaction is a homogeneous, monomolecular reaction. The rate constant is pressure dependent in the region studied. The half value pressure is about 1 mm Hg. The temperature coefficient is 3.1. $k_\infty = 4.5 \times 10^{15} \times 10^{-32,900/4.57\,T}$ sec.$^{-1}$ Chlorine and oxygen have about the same activation action, about 4-1/2 times smaller than that of pure heptoxide. There 21 degrees of freedom contributing to the activation, for which the deactivation factor γ is 1. The critical energy of decomposition is 48.2 Kcal. The decomposition of chlorine heptoxide takes place as follows:

$$Cl_2O_7 \rightarrow ClO_3 + ClO_4$$

In the presence of fluorine the initially formed products are almost quantitatively converted to chloryl fluoride and perchloryl fluoride. A reaction series is given to explain the formation of these products. (Author)

Genov, L. Kh., Nesmeyanov, An. N., and Prislekov, Yu. A.
MEASURING THE VAPOR PRESSURE OF THALLIUM BY THE RADIOTRACER METHOD. [1962] [6]p. 12 refs.
Order from OTS or SLA $1.10 63-13716

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 140 [no. 1] p. 159-161.

DESCRIPTORS: *Vapor pressure, Measurement, *Thallium, *Tracer studies, Radioactive isotopes.

Flood, H. and Sorum, H.
THE $Na_2O - V_2O_5$ SYSTEM. Pt. 1 of Concerning Vanadyl-Vanadates: A New Type of Electrical Semi-Conductor. [1962] 14p. 11 refs.
Order from SLA $1.60 62-20223

Trans. of Tidsskrift for Kjemi, Bergvesen og Metallurgi (Norway) 1943, no. 5, p. 55-59.

DESCRIPTORS: *Semiconductors, Vanadates, *Sodium compounds, *Vanadium compounds, Oxides, Phase studies, Chemical reactions, Crystal structure, Electrical conductance, Chemical analysis, Calorimetry, X-ray diffraction analysis.

Gorbachev, S. V. and Zhuk, N. P.
THE EFFECT OF TEMPERATURE ON THE RATE OF ELECTROLYTIC EVOLUTION OF CHLORINE (Vliyanie Temperatury na Skorost' Protsessa Elektroliticheskogo Vydeleniya Khlora). May 61 [27]p. (foreign text included) 13 refs. NLL M 3382.
Order from OTS or SLA $2.60 62-23888

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1951, v. 25, no. 7, p. 841-853.
Another trans. is available from LC or SLA mi$2.70, ph$4.80 as 60-17470, RTS-1332, May 60 [26]p.

DESCRIPTORS: *Chlorine, Production, Temperature, Reaction kinetics, *Platinum electrodes, Polarization, Sodium compounds, Chlorides, Chlorates, Electrolysis, *Electrochemistry.

For abstract see Technical Translations 4: 506, 1960.

[Izidinov, S. O.] Borisova, T. I., and Veselovskii, V. I.
STATE OF THE SURFACE OF A GERMANIUM ELECTRODE IN THE PROCESS OF ANODIC DISSOLUTION. [1962] 10p. 8 refs.
Order from OTS or SLA $1.10 63-10705

Trans. of A[kademiya] N[auk] SSSR. D[oklady] 1962, v. 145 [no. 3] p. 598-[601].

DESCRIPTORS: Surface properties, *Electrodes, Anodes, *Germanium, Separation, Semiconductors, Phase measurement, Illumination, Electrochemistry.

The present paper attempts to clarify the relationship between the mechanism and kinetics of dissolution of a germanium anode and its semiconducting nature by the method of measurement of the impedance of the semiconductor electrolyte phase boundary, including effects of illumination.

Khristov, S. G.
THE ROLE OF THE TUNNEL EFFECT IN CHEMICAL REACTIONS. [1962] [7]p. 19 refs.
Order from OTS or SLA $1.10 63-13862

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 136, no. 3, p. 663-666.

DESCRIPTORS: *Chemical reactions, Temperature, *Transport properties, Electric potential.

Koch, L. and Lesueur, R.
SOME RESULTS ON THE FLUORESCENCE OF GASES EXCITED BY HIGH-ENERGY PARTICLES. [1962] [9]p. (figs. omitted) 24 refs.
Order from SLA $1.10 62-20459

Trans. of mono. International Conference on Ionization Phenomena in Gases (no. 3) Venice, 11-15 June [57]. [Proceedings] 1958, p. 534-543 (Commissariat à l'Énergie Atomique. [Rapport] (France) no. 869, July 58).

DESCRIPTORS: *Fluorescence, *Gases, *Charged particles, Luminescence, Gas ionization, Scintillation counters, Fission products.

Kondrat'ev, V. N.
THE RATE CONSTANT OF THE REACTION $HO_2 + H_2O = H_2O_2 + OH$. [1962] [6]p. 7 refs.
Order from OTS or SLA $1.10 63-13863

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 137 [no. 1] p. 120-122.

DESCRIPTORS: Chemical reactions, *Hydrogen peroxide, Water, Hydroxides, *Reaction kinetics, *Chemical equilibrium, Oxides.

Köster, R. and Ziegler, K[arl].
THE PREPARATION OF DIBORANE. 13 Aug 58, 3p. 1 ref,
Order from SLA $1.10 63-10608

Trans. of Angew[andte] Chem[ie] (West Germany) 1957, v. 69 [no. 3] p. 94-95.
Other translations are available from SLA $1.10 as 61-20932 [1961] 2p. and from ES $3.00 as 61-25131 [1961] 6p.

DESCRIPTORS: *Diboranes, Synthesis, Chemical reactions.

For abstract see Technical Translations 7: 626, 1962.

Kozina, M. P., Lukina, M. Yu. and others.
THE HEATS OF COMBUSTION OF SOME PHENYLCYCLOPROPANES. [1962] [5]p. 15 refs.
Order from OTS or SLA $1.10 63-15131

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 138, no. 4, p. 843-845.

DESCRIPTORS: Heat of reaction, *Combustion, *Phenyl radicals, *Propanes, Thermochemistry.

The present paper reports the results of a determination of the heat of combustion of phenylcyclopropane, 1,1-diphenylcyclopropane, and the two stereoisomeric 1,2-diphenylcyclopropanes.

Krasnov, K. S.
THE BOND ENERGY IN HALIDE MOLECULES OF GROUP II AND AN IONIC MODEL. [1962] [8]p. 21 refs.
Order from OTS or SLA $1.10 63-13578

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. [Khimiya i Khimicheskaya Tekhnologiya] (USSR) 1961 [v. 4] no. 1, p. 38-44.

DESCRIPTORS: *Halides, *Group II elements, Energy, *Chemical bonds, Molecules, Ionization, Electrical conductance.

A calculation was made of the bond energy of molecules of halides of Group II of the periodic system on the basis of an ionic model with coefficients of repulsion calculated from the effective charges of the ions. For salts of $BeHal_2$, $CaHal_2$ and $BaHal_2$ the deviations of the calculated values from the experimental are 3% on the average, for $ZnHal_2$ and $CdHal_2$ they reach 10%, and for mercury salts, 20%. In the latter, a covalent interaction predominates. Evidently calculation on the basis of an ionic model is possible for halides of metals whose electrical conductivity does not exceed 1.3 - 1.5. (Author)

Nikitin, E. E.
INTERMOLECULAR ENERGY TRANSFER IN COLLISIONS OF CHEMICALLY ACTIVE MOLECULES. [1962] [6]p. 8 refs.
Order from OTS or SLA $1.10 63-13864

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 136 [no. 6] p. 1376-1379.

DESCRIPTORS: *Molecular properties, Atomic properties, Chemical reactions, Vibration, Energy, *Excitation, Kinetic theory, Transport properties.

Nowotny, H., Parthe, E. and others.
THE THREE COMPONENT SYSTEM Mo-Si-C (Das Dreistoff-system: Molybdän-Silizium-Kohlenstoff). [1962] [20]p. (refs. omitted) 9 refs.
Order from SLA $1.60 62-18663

Trans. of Monatsh[efte für] Chemie (Austria) 1954, v. 85, p. 255-272.

DESCRIPTORS: *Molybdenum alloys, *Silicon alloys, *Carbon alloys, Molybdenum compounds, Silicates, Silicon compounds, Carbides, *Carborundum, *Phase studies, Crystal structure, Calorimetry, Melting, X-ray diffraction analysis, Microchemistry.

The topics discussed include the results of a new investigation of the limiting system Mo-C; the determination of the structure of MoC; a thermal investigation of Si-C; the establishment of the ternary system Si-C by X-ray analysis, melting point measurements, and microscopic observation; and the crystal structure and properties of a new ternary phase.

Ogawa, H., Amano, Y., and Ando, K.
ELECTROLYTIC OXIDATION OF AQUEOUS MANGANOUS SULFATE SOLUTIONS WITH A LEAD ANODE. [1962] 12p.
Order from ATS $18.55 ATS-69P59J

Trans. of Nat[ional] Tech[nical] Rep[ort] (Japan) 1960, v. 6, no. 4, p. 364-371.

DESCRIPTORS: *Electrolysis, *Oxidation, *Manganese compounds, *Sulfates, Water, Solutions, Lead, Anodes.

Rabinovich, I. B., Tel'noti, V. I. and others.
THE THERMOCHEMISTRY OF THE REACTION OF HEXAETHYLDISTANNANE WITH BENZOYL PEROXIDE. [1962] [7]p. 14 refs.
Order from OTS or SLA $1.10 63-15129

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 138, no. 4, p. 852-855.

DESCRIPTORS: *Thermochemistry, Chemical reactions, *Benzoyl radicals, Heat, *Peroxides, *Tin compounds, Ethyl radicals, *Metalorganic compounds.

The present paper is a study of the thermochemistry of the reaction between hexaethyldistannane and benzoyl peroxide, with dibutyl phthalate employed as the solvent.

Roginskii, S. Z., Yanovskii, M. I., and Gaziev, G. A.
CHEMICAL REACTIONS IN CHROMATOGRAPHIC COURSE. [1962] 4p. 2 refs.
Order from OTS or SLA $1.10 62-20388

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 140, no. 5, p. 1125-1127.

DESCRIPTORS: *Chemical reactions, *Catalysis, *Chromatographic analysis, Material separation, Chemical equilibrium, Phase studies, Adsorption, Poisoning.

Roginskii, S. Z.
THE ROLE OF ELECTRONIC FACTORS IN CATALYSIS. [Report submitted to the International Congress on Catalysis (no. 2)]. [1962] 22p. 60 refs.
Order from OTS or SLA $2.60 62-20398

Trans. of Kinetika i Kataliz (USSR) 1960, v. 1 [no. 1] p. 15-31.
Another trans. is available from OTS or SLA $1.60 as 61-27601, DSIR LLU M. 3126 [1961] [20]p.

DESCRIPTORS: *Catalysis, *Electrochemistry, Electronics, Catalysts, Semiconductors, Chemisorption, Surface properties, Ionization potentials.

For abstract see Technical Translations 6: 653, 1961.

Rubinshtein, A. M., Slovetskaya, K. I., and Brueva, T. R.
ADSORPTION OF 2-METHYLBUTENE-2 ON A DEHYDROGENATION CATALYST. [1962] 7p. 7 refs.
Order from OTS or SLA $1.10 63-10226

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2, no. 4, p. 584-589.

DESCRIPTORS: *Adsorption, *Methyl radicals, *Butenes, *Dehydrogenation, Catalysts, Heat, *Chemisorption, Pentanes.

It was established that at 20° to 400 C the 2-methylbutene-2 is physically adsorbed on the alumina-chromia-potassia catalyst for dehydrogenation of paraffins, while its chemisorption is negligibly small at 200° to 400 C and its presence is indicated only by an extremely slow polymerization of the hydrocarbon. The adsorption heat of 2-methylbutene-2 at 20° to 150 C coincides with that found for isopentane and is of 10.5 kcal/mole at $\theta \leq 0.5$. Molecular areas of both hydrocarbons are equal on this catalyst's surface and - of 56 A^2. A sharp behavior difference between 2-methylbutene-2 and isopentance was found at high temperature adsorption, while the latter is chemisorbed under the mentioned conditions on the investigated catalyst. (Author)

Schulz, G. V.
EFFECT OF POLYMERIZATION INHIBITORS. 31 Mar 49, 9p. (formulae tables refs. omitted).
Order from SLA $1.10 62-18688

Trans. of Makromolekulare Chemie (Switzerland) 1947, v. 1, Sep, p. 94-105.

DESCRIPTORS: *Polymerization, Classification, Inhibition, *Reaction kinetics, Molecular structure, *Antioxidants, *Chain reactions, *Styrenes, Fluorenones, Peroxides, Benzaldehydes, Hydrocarbons.

Schumacher, H. J. and Sprenger, G.
THE EXISTENCE OF HIGHER NITROGEN OXIDES. 24 Oct 60, 9p. 25 refs.
Order from SLA $1.10 63-10498

Trans. of Angew[andte] Chem[ie] (Germany) 1929, v. 42, p. 697-700.

DESCRIPTORS: *Oxides, *Nitrogen compounds, Oxidation, Spectroscopy, Ozone, Decomposition, Reaction kinetics.

Shidlovskii, A. A.
COMBUSTION OF THE INORGANIC SALTS AMMONIUM IODATE AND HYDROXYLAMINE SULFATE. 28 Dec 62, 12p. 13 refs. FTD-TT-62-1604. NASA N63-13581.
Order from OTS or SLA $1.60 63-15560

Unedited rough draft trans. of Zhurnal Prikladnoi Khimii (USSR) 1962, v. 35, no. 3, p. 511-516.

DESCRIPTORS: *Combustion, *Ammonium compounds, *Iodates, *Sulfates, Salts, Pressure, Heat of reaction, Temperature, Catalysis, *Amines, *Hydroxides.

It has been experimentally demonstrated that the compounds: ammonium iodate and hydroxylamine sulfate, which decompose with the evolution of a small quantity of heat (72 and 120 kcal/kg, respectively) and are not capable of stable combustion with a tube

diameter of 2.0 cm at room temperature and atmospheric pressure, acquire this ability when: catalysts (chromium, manganese, or copper compounds), which increase their rate of thermal decomposition, are added to them; when the experiments are conducted at an elevated temperature (60° to 100°); c) (when in the case of ammonium iodate) the experiments are carried out under elevated pressure (120 atm).

Skuratov, S. M., and Shtekher, S. M.
REFINING THE VALUES OF THE CONSTANTS IN V. M. TATEVSKII'S SCHEME FOR CALCULATING THE HEATS OF FORMATION OF ALKANES. [1962] [5]p. 21 refs.
Order from OTS or SLA $1.10 63-13859

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 137, no. 1, p. 109-110.

DESCRIPTORS: *Heat of formation, Combustion, *Pentanes, Liquids, Gases, *Butanes, Methyl radicals, *Hexanes, *Heptanes.

Slin'ko, M. G.
SIMULATION OF CONTACT PROCESSES. [1963] 16p.
Order from ATS $23.50 ATS-74P65R

Trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 4, p. 481-492.

DESCRIPTORS: Simulation, *Catalysts, Catalysis, *Reaction kinetics.

Sokolov, O. K., and Belyaev, A. I.
FREE ENERGY AND MECHANISM OF FORMATION OF THE COORDINATION COMPOUND $NaMgF_3$. [1962] [9]p. 12 refs.
Order from OTS or SLA $1.10 63-15457

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Tsvetnaya Metallurgiya (USSR) 1960 [v. 3] no. 5, p. 72-78.

DESCRIPTORS: Synthesis, *Complex compounds, Cryolite, *Sodium compounds, *Magnesium compounds, *Fluorides, Entropy, Heat of formation, Chemical reactions, Metallurgy.

Stolnikov, V. V.
INVESTIGATION OF THE ELASTO-PLASTO-VISCOUS PROPERTIES OF CEMENT-WATER PASTES. [1962] 18p. 3 refs.
Order from OTS or SLA $1.60 63-10199

Trans. of Vses[oyuznyi] Nauchno-Issledov[atel'skii] Institut Gidrotekhniki. Izv[estiya] (USSR) 1949, v. 41, p. 98-109.

DESCRIPTORS: *Cements, Water, Plasticity, Viscoelasticity, Creep, Structural properties, Surface-active substances, Gels, Films.

Ueda, Shizuo, Watanabe, Akira, and Tsuji, Fukuju.
CONDUCTANCE OF LIGNIN SULFONATES IN MIXED SOLVENTS. Pt. 1 of Physico-Chemical Studies on Lignin. [1962] 21p. 16 refs.
Order from SLA $2.60 62-18726

Trans. of Nihon Nogei-Kagakkai Shi (Japan) 1961. v. 35 [no. 10] p. 908-915.

DESCRIPTORS: *Electrical conductance, *Lignin, *Sulfonates, Sodium compounds, Solvents, Solutions, Ethanols, Physical chemistry.

Conductivity of sodium lignin sulfonate (NaLS) was measured using ethanol-water mixed solvent as a medium. When the concentration of NaLS is a low, Kohlrausch's law can be applied; and the ultimate value, Λ_c, at zero concentration can be obtained by extrapolating the curve correlating the equivalent conductivity and the square root of the concentration. Under the same molecular weight, the Λ_o of the NaLS is lowered as the concentration of ethanol increases, but the product of Λ_o and the viscosity coefficient of the solvent will remain constant. When the concentration of NaLS is high, the specific conductivity vs. concentration plot shows an inflection point at a certain NaLS concentration, indicating a formation of micelle. The critical micelle concentration (cmc) shifts towards higher concentration with the addition of alcohol.

EARTH SCIENCES

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY: [SELECTED] TRANSLATIONS NO. 28. 19 Apr 63 [116]p. 15 refs. JPRS: 18801.
Order from OTS $2.50 63-21617

Trans. of Ti Li Hsüeh Pao (Chinese People's Republic) 1962, v. 28, no. 2, p. 111-122, 137-147, 149-174.

DESCRIPTORS: *Reports, *China, Wind, *Tibet, Climatology, Deltas, *Salinity, Damage, *Agriculture, *Geography.

Contents:
The monsoon phenomenon of the Tibetan plateau, by Hsu Shu-ying and Kao Yu-hsi
Damages from saline water in Hsi Chiang Delta, by Huang Hsin-hua and others
A preliminary discussion on the agricultural zones of Kwantung, by Chung Kung-p'u
Some preliminary thoughts on synthetic natural regions in China, by I. Shao-chen and Hsu Chun-ming
Views on "Questions concerning natural regions in China", by Liu Yin-han.

Deryagin, B.
ON THE DAMPING AND DISPERSION OF SEISMIC WAVES. [1962] 20p. 26 refs.
Order from OTS or SLA $1.60 62-20298

Trans. of Zhurnal Geofiziki (USSR) 1931, v. 1, p. 207-222.

DESCRIPTORS: *Seismic waves, Damping, Propagation.

A theory of seismic-wave propagation is developed on the basis of Boltzmann's theory of elastic post-action. The theory leads to damping and dispersion of seismic waves, in agreement with observation. In the conclusion an application of the principle of conservation of momentum to pulse propagation, is given. (Author)

Nikol'skii, I. V.
GEOGRAPHY OF THE TRANSPORT OF THE USSR: SELECTED PARTS, tr. by C. D. 25 Feb 63, 72p. (figs. refs. omitted). I-1637.
Order from OTS or SLA $7.60 63-19048

Trans. of mono. Geografiya Transporta SSSR, Moscow, 1960, p. 6-8, 110-113, 190-215, 271-380.

DESCRIPTORS: *Transportation, *Geography, Economics, Commerce, Classification, *Rivers, Harbors, Construction, *Inland waterways, Water traffic.

Contents:
Significance of transport in the national economy of the USSR
Classification of river ports and landings and their location
Development and reconstruction of USSR waterways
Geography of transport of the North
Geography of Belorussian transport
Geography of transport of the South
Geography of the transport of the Caucasus
Geography of Volga area transport
Geography of transport of the Urals
Geography of transport of Siberia
Geography of the transport of the Far East
Geography of Kazakhstan transport.

Toporkov, L. G.
CAN THE ARCTIC ICE CAP BE REMOVED? [1962] [6]p. [DSIR] NLL M. 6303.
Order from OTS or SLA $1.10 63-13393

Trans. of Priroda (USSR) 1961 [v. 50] no. 11, p. 93-97. An abstract trans. is available from OTS or SLA $1.10 as 62-19116, AID-62-8, 19 Jan 62 [3]p.

DESCRIPTORS: *Climate, *Arctic regions, Ocean currents, *Ice, Melting, Climatic factors, Theory.

For abstract see Technical Translations 8: 556, 1962.

Geodesy

UKRAINIAN ACADEMY OF SCIENCES, GEOLOGICAL SCIENCE INSTITUTE, TRANSACTIONS, GEOPHYSIC SERIES, 1958 [VOL.] 2 [SELECTED ARTICLES]. [1962] [110]p. 46 refs. ACIC G-14.
Order from OTS or SLA $9.10 62-33415

Trans. of Akademiya Nauk URSR [Kiev]. Instytut Geologichnykh Nauk. Trudy: Seriya Geofizicheskaya, 1958, v. 2, p. 3-14, 27-42, 62-68, 79-97.

DESCRIPTORS: Geology, *Geophysics, *Gravity anomalies, Gravity, *Terrestrial magnetism, *Black Sea, Stratigraphy.

Contents:
The nature of some gravity anomalies in the Dnepr-Donets Depression, by S. I. Subbotin
Gravitational and magnetic anomalies of the Pripyat' Depression and their relationship with the geological structure, by T. S. Lebedev
Certain features of the geomagnetic and gravity anomaly fields of the central portion of the Black-Sea Depression and their geological interpretation, by M. F Skopichenko
Possible values of gravity anomalies in various structures of the earth's crust, by P. Ya. Galushko
Possibilities of the use of the grid method for the interpretation of anomalies of the horizontal gravity gradient, by A. A. Yun'kov and E. G. Bulakh.

Gromov, S. V.
THE QUESTION ON THE DETERMINATION OF THE GENERAL TERRESTRIAL ELLIPSOID. [1962] [11]p. 4 refs.
Order from OTS or SLA $1.60 63-10310

Trans. of Leningrad U. Vestnik (USSR) 1961 [v. 16] no. 7 [Seriya Matematiki, Mekhaniki i Astronomii, no. 2] p. 136-141.

DESCRIPTORS: Determination, *Ellipsoids, *Earth models, *Geodesics, Gravity, Acceleration, Equations, Errors.

This paper presents a resume of some of the problems involved in determination of a standard Earth model. (Author)

Grossmann, Walter.
DETERMINATION OF THE GRAVITY DIFFERENCES BETWEEN EUROPEAN AIRPORTS WITH AN ASKANIA GRAVIMETER GS-12 (Bestimmung der Schwereunterschiede Zwischen Europaischen Flughafen mit einem Askania-Gravimeter GS-12) tr. by J. Willis and H. Tomas. June 61 [39]p. 4 refs. ACIC TC-284.
Order from OTS or SLA $3.60 62-25592

Partial trans. of [Akademie der Wissenschaften, Munich. Deutsche Geodätische Kommission. Veröffentlichungen. Reihe] B (West Germany) 1960, no. 66.

DESCRIPTORS: *Gravity anomalies, *Gravimeters, Gravity, Airports, Europe, *Geodesics.

As a contribution to determining the European milligal and to the gravimetric connection of first-order gravity points, gravity measurements were performed between European airports in 1958, 1959 and 1960 by the Geodetic Institute of the Hannover Technische Hochschule. The good inner consistency of the results makes it apparent that the type of gravimeter used is well suited for measurements over a large area with air transportation. (Author)

Jung, Karl.
THE HARMONIC MEMBER OF FIRST ORDER WITH ISOSTASY, tr. by H. Tomas. May 61 [9]p. ACIC TC-271.
Order from OTS or SLA $1.10 62-25629

Trans. of Suomen Geodeettinen Laitos. Julkaisuja (Finland) 1955, no. 46, p. 81-87.

DESCRIPTORS: *Potential theory, *Harmonic analysis, *Gravity, Earth models, Celestial mechanics, Hydrostatics, Spheres.

It is shown how a harmonic term of first order can be adopted to well known isostatic theories, given that displacement of the gravity center takes place.

Nordenskiold, A. E.
FACSIMILE ATLAS TO THE EARLY HISTORY OF CARTOGRAPHY. 1963, 141p.
Order from Kraus Reprint Corp., 16 E. 46 St., New York 17, N. Y. $10.00

Trans. of unidentified Swedish mono., n. p., n. d.

DESCRIPTORS: *History, *Mapping, Maps.

Shcheglov, V. P.
TOPOGRAPHIC-GEODETIC AND CARTOGRAPHIC STUDIES OF UZBEKISTAN. [1962] [20]p. ACIC RR-28.
Order from OTS or SLA $1.60 62-25428

Trans. of mono. Conference on the Study of the Productive Forces of Uzbekistan (no. 1). Transactions and Materials, v. 4, 1934, p. 95-108.

DESCRIPTORS: *Terrain, *Geodesics, *Mapping, Exploration, Triangulation.

Watermann, H.
GUIDING PRINCIPLES FOR THE CONSTRUCTION OF GERMAN GRAVITY NETWORK: GERMAN GRAVITY ARCHIVE, tr. by H. Tomas. May 61 [26]p.
ACIC TC-268
Order from OTS or SLA $2.60 62-25589

Partial trans. of Akademie der Wissenschaften, Munich. Deutsche Geodätische Kommission. [Veröffentlichungen] Reihe B (West Germany) 1956, no. 28, p. 1ff.

DESCRIPTORS: *Gravity, Gravimeters, *Germany, *Geodesics, Data, Documentation, Triangulation, Construction.

German Geodetic Commission, in cooperation with the Bureau of Soil Research and the German Geodetic Research Institute, prepared the guiding principles for the establishment of the Gravity Archive; it also worked out the special printed forms for the representation of the results of pendulum and gravimeter measurements. The guiding principles for the collection, registration, and publication of gravity data are summarized and explained. (Author)

Geology

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 123 (EARTH SCIENCES SERIES). 3 Apr 63 [8]p. JPRS: 18523.
Order from OTS $0.50 63-21490

Abstract trans. of [Polska Akademia Nauk. Bulletin: Serie des Sciences Geologiques et Geographiques, 1962, v. 10, no. 3, p. 121-127, 129-143, 145-151, 153-159, 161-177, 179-183.

DESCRIPTORS: *Abstracts, *Geology, *Poland, Petrology, Geogony, *Stratigraphy, *Paleoecology, Drainage, Economic geology, Minerals, Mountains, Microorganisms.

ATLAS OF THE GUIDE FORMS OF THE FOSSIL FAUNAS OF THE USSR, VOL. 3. [1961] 78p.
Order from OTS or SLA $7.60 61-15877

Trans. of unidentified mono., Moscow/Leningrad, 1947.

DESCRIPTORS: Taxonomy, *Plants (Botany), *Paleoecology, Geology.

NEW SPECIES OF ANCIENT PLANTS AND INVERTEBRATES OF THE USSR, PT. I: EXTRACTS. [1962] 99p.
Order from OTS or SLA $8.60 62-23747

Trans. of [Novye Vidy Drevnikh Rastenii i Bezpozvonochnykh SSSR] Moscow, 1960, p. 15-42.

DESCRIPTORS: *Abstracts, Geology, Animals, Marine biology, Aquatic animals, *Plants (Botany), Taxonomy, Distribution, *Paleoecology, *Geological age determination, Geological survey, *Stratigraphy.

See also: 62-23748

Contents:
New early-carboniferous lycopsids of southern Siberia, by G. P. Radchenko
New late-Permian Kuznetsk Koretrophyllites, by S. G. Gorelova
A new species of Liassic Equisetum of North-West Kazakhstan and Siberia, by V. P. Vladimirovich
New Karaganda representative of Autophyllitaceae, by M. O. Borsuk and G. P. Radchenko
New species of a early-Mesozoic Neocalamites, by A. I. Tututanova-Ketova
New species of schizoneuric plants of the Urals and Siberia, by V. P. Vladimirovich and others.

NEW SPECIES OF ANCIENT PLANTS AND INVERTEBRATES OF THE USSR, PT. I: EXTRACTS. [1962] 300p. 31 refs.
Order from OTS or SLA $18.50 62-23748

Trans. of [Novye Vidy Drevnikh Radtenii i Bezpozvonochnykh SSSR] Moscow, 1960, p. 49-134.

DESCRIPTORS: *Abstracts, Geology, *Plants (Botany), Animals, Taxonomy, Distribution, *Paleoecology, *Geological age determination, Geological survey, *Stratigraphy.

Contents:
New species of Liassic Botrychium, by Yu. M. Kuzichkina
New representative of Matoniaceae of Central Asia, by T. A. Sixtel

New species of ferns of the Urals, Kazakhstan and Siberia, by V. P. Vladimirovich and others
New species of Rhodea in the province of Altai-Sayan, by G. P. Radchenko
New Keuperian Sphenopteris of Central Asia, by T. A. Sixtel
New species of Karaganda Neuropteris, by M. I. Borsuk
New species of Angaropteridium of eastern districts of Siberia, by V. M. Kovbasina
New species of Pteridosperms of the Kuznetsk Basin, by S. G. Gorelova
New Late-Triassic Madygenopteris of Tadzhikistan, by T. A. Sixtel
New species of Vittatina of the Kama Ural region, by V. V. Sauer
New species of Late-Triassic Bennettitales, by Yu. M. Kuzichkina
New species of a Kuznetsk Glossozamites, by G. P. Radchenko
New Siberian Early-Triassic Cycadophytes, by I. N. Srebrodolskaya
Two new Late-Paleozoic Cordaites of Central Asia, by G. P. Radchenko
New species of Late-Permian Cordaites of Siberia, by S. G. Gorelova
New species of Late-Permian Crassinervias of Siberia
New representative of Late Triassic Ginkgoites, by S. G. Gorelova
New species of Jurassic Ginkgo of Central Asia, by Yu. M. Kuzichkina
New Early-Triassic Siberian Rhipidopsis, by I. N. Srebrodolskaya
New Ferganiellas of Central Asia, by A. I. Turutanova-Ketova
New Pityophyllum of Central Asia, by A. I. Turutanova-Ketova
New Glottophyllum of the Kuznetsk Basin, by G. P. Radchenko
New species of Nephropsis Zalessky, 1912 of the Kuznetsk Basin, by S. G. Gorelova and G. P. Radchenko
New species of Gymnosperms of Siberia and Kazakhstan, by G. P. Radchenko and I. N. Srebrodolskaya
New species of Paleozoic Gymnospermous plants of Siberia, by N. G. Verbitskaya and V. M. Kovbasina
New species of Mezozoic Gymnospermous plants of North-West Kazakhstan, by V. P. Bladimirovich
New species of Angiospermae, by N. D. Mchedlishvili and S. R. Samoilovich.
See also 62-23749.

NEW SPECIES OF ANCIENT PLANTS AND INVERTEBRATES IN THE USSR, PT. I: PLATE LEGENDS. [1962] 57p.
Order from OTS or SLA $5.60 62-23749

Trans. of [Novye Vidy Drevnikh Rastenii i Bezpozvonochnykh SSSR] Moscow, 1960, p. 424-470.

DESCRIPTORS: Geology, Animals, *Plants (Botany), *Geological age determination, *Stratigraphy, Taxonomy, *Paleoecology.

Belkay, Balint.
RECENT EXPERIMENTS ON PHYSICAL PROPERTIES OF ROCKS. [1962] 4p. 9 refs.
Order from SLA $1.10 62-14625

Trans. of Foldtani Kozlony (Hungary) 1956, v. 86, p. 284-286.

DESCRIPTORS: *Rock (Geology), *Petrology, Crystal lattices, Plasticity, Deformation, Metals, High-temperature research, Crystal structure, High-pressure research, Physical properties.

Bilke, Robert.
MACHINE FOR MINING ROCK SALT, POTASH SALT AND THE LIKE, tr. by J. R. -P. 30 Nov 62, 6p. (figs. omitted).
Order from OTS or SLA $1.10 63-13748

Trans. of German patent 316,292, cl. 5b, gr. 12, pat. from 14 Oct 15, pub. 24 Nov 19.

DESCRIPTORS: *Machines, *Mining engineering, *Rock salt, Design, Disks, Cutting tools.

Dain, L. G. and Grozdilova, L. P.
FOSSIL FORAMINIFERA OF THE USSR (Iskopaemye Foraminifery SSSR), tr. by Ivan Mittin. 1961 [20]p. (figs. refs. omitted).
Order from OTS or SLA $1.60 63-13868

Trans. of Vsesoyuz[nyi] Neftyanoi Nach[no]-Issl [edovatel'skii] Geologo-Razv[edochnyi Inst[itut]. Trudy (USSR) 1953, v. 74, p. 21-22, 26-31, 36-38.

DESCRIPTORS: Paleoecology, *Foraminifera, Taxonomy, Geology.

Gumatudinov, Sh. K.
THE MECHANISM OF DETERGENT ACTION OF WATERS OF VARIOUS COMPOSITIONS IN DISPLACING PETROLEUM FROM A POROUS MEDIUM. [1963] 7p.
Order from ATS $10.75 ATS-12067R

Trans. of Neft[yanoe] Khoz[yaistvo] (USSR) 1962, v. 40, no. 10, p. 43-48.

DESCRIPTORS: *Petroleum, Porous materials, Displacement reactions, Water, Mining engineering, Detergents.

Lipina, O. A.
FORAMINIFERA OF THE TOURNAISIAN STAGE AND UPPER PART OF DEVONIAN OF THE VOLGA-URAL REGION AND WESTERN SLOPE OF THE CENTRAL URALS (Foraminifery Turneiskogo Yarusa i Verkhnei Chasti Devona Volgo-Ural'skoi Oblasti i Zapadnogo Sklona Srednego Urala), tr. by Ivan Mittin. 1961 [9]p. 2 refs.
Order from OTS or SLA $1.10 63-13869

Partial trans. excerpts of A[kademiya] N[auk] SSSR. Institut Geologicheskikh Nauk. Trudy. Geol[ogicheskaya] Seriya, 1955, no. 163(70), p. 53, 59-61, 76-77.

DESCRIPTORS: Geology, *Poleoecology, Deposits, *Foraminifera.

Maksimov, M.
INVESTIGATIONS OF THE INTERRELATIONS OF PRODUCTIVE LEVELS OF MAIKOP LIGHT OIL IN CONNECTION WITH THE GENESIS OF THE BRANCH-SHAPED MAIKOP OIL-POOL (Issledovaniya Vzaimootnoshenii Produktivykh Gorizontov Maikopskoi Legkoi Nefti v Svyazi s Genezisom Maikopskoi Rukavoobraznoi Zalezhi). [1962] [115]p. (foreign text included) 9 refs.
Order from OTS or SLA $9.60 63-10217

Trans. of Neftyanoe Khozyaistvo (USSR) 1929 [v. 17] no. 11/12, p. 813-834.
Another trans. is available from OTS or SLA $9.60 as 62-16408 [1962] [117]p.

DESCRIPTORS: *Petroleum, Sources, *Geology, Well drilling, Hydraulic reservoirs, *Stratigraphy.

Mukhin, Yu. V.
METHODS OF COMPILING HYDROGEOLOGICAL MAPS OF OIL- AND GAS-BEARING TERRITORIES. [1962] 3p.
Order from OTS or SLA $1.10 63-10218

Trans. of Moskovskoe Obshchestvo Ispytatelei Prirody. Byulleten'. Otdel Biologicheskii (USSR) 1960, v. 35[(65)] no. 3, p. 167.

DESCRIPTORS: Synthesis, *Maps, *Economic geology, Oils, Gases, Hydrology, *Geophysical prospecting.

Rozov, N. N.
PRINCIPLES OF ELABORATING A GENETIC CLASSIFICATION OF SOILS (K Voprosu o Printsipakh Postroeniya Geneticheskoi Klassifikatsii Pochv). 1963, 8p. PL-480 Agr.
Order from OTS $0.50 61-31001

Trans. of Pochvovedenie (USSR) 1956, no. 6, p. 76-[81]

DESCRIPTORS: *Soils, *Genetics, Classification, Taxonomy, *Soil mechanics, Synthesis, Organic materials, Geology, Water entry, Minerals, *Geochemistry.

The present communication is a preliminary attempt to deal comprehensively with the classification problem, based on currently available data on the world's soil cover and on modern pedogenetic concepts. (Author)

Schmid, Christoph.
RECENT INVESTIGATIONS INTO THE PROBLEM OF OBTAINING HEAVY OIL FROM SAND DEPOSITS. II. APPLICATION OF HEAT AND SOLVENTS (Neuere Untersuchungen zur Frage der Schwerölgewinnung aus Sandlagerstätten. II. Anwendung von Wärme und Lösungsmitteln). [1962] [14]p. (foreign text included) 18 refs.
Order from SLA $1.60 62-18522

Trans. of Erdol und Kohle (West Germany) 1958, v. 11 [no. 2] p. 72-75.

DESCRIPTORS: *Petroleum, *Oils, *Sand, Deposits, Boreholes, Fluid flow, Heat, Solvent extraction.

Timofeev-Resovskii, N. V.
THE DISTRIBUTION OF DISPERSED ELEMENTS THROUGHOUT THE COMPONENTS OF WATER BASINS. 18 Jan 63 [11]p. 38 refs. FTD-TT-62-1314.
Order from OTS or SLA $1.60 63-15760

Unedited rough draft trans. of [Akademiya Nauk SSSR]. Institut Biologii [Sverdlovsk]. Trudy, 1960, no. 12, p. 189-193.

DESCRIPTORS: Distribution, *Chemical elements, *Geochemistry, *Water supplies, Soil mechanics, Ecology, Plants, Radiation effects.

Meteorology

Baranov, V. I., Du, Le-tian, and Korobkov, V. I.
GEOCHEMISTRY OF URANIUM AND THORIUM IN GRANITE ROCKS OF THE KYZYL-TAU MASSIF (CENTRAL KAZAKHSTAN) REPT. 2: TYPES OF RADIOACTIVE ELEMENTS FOUND IN GRANITE ROCKS. [1962] 11p. 6 refs.
Order from OTS or SLA $1.60 AEC-tr-5481

Trans. of #Geokhimiya (USSR) 1962, no. 5, p. 411-419.

DESCRIPTORS: *Geochemistry, Igneous rock, *Granite, Radioactive isotopes, *Uranium, *Thorium, *Radiography.

As the differentiation of the magma proceeds, the thorium content, in contrast to uranium which accumulates in the late differentiations, gradually decreases in them. The uranium, and possibly thorium content, is tightly packed in the rocks and constituent minerals. The presence of the main uranium mass of granite rocks either in the rock-forming or accessory minerals depends primarily on the formation conditions of the given rocks and in particular, on the rate of crystallization of the magma which produced these rocks. A radiographic study of the forms in which uranium may be found, has shown that in addition to the three types determined by the primary crystallization of the magma, there are others which characterize the behaviour of uranium in secondary processes-autometamorphism and hydrothermal treatment of the rocks. Experimental data have proven that uranium is introduced into various Kyzyl-Tau granite minerals under the effect of the secondary processes. A study of the radiography and rock and mineral distribution of uranium has shown that autometamorphism and the latent crystallization of the magma are the most important factors causing the distribution non-uniformity of uranium in the Kyzyl-Tau granites.

Shafranovskii, I. I.
SYMMETRY GROUPS IN STRUCTURAL PETROLOGY (Gruppy Simmetrii v Strukyurnoi Petrologii). [1962] [17]p. (foreign text included) 18 refs.
Order from OTS or SLA $1.60 63-10213

Trans. of Vsesoyuznoe Mineralogicheskoe Obshchestvo. Zapiski (USSR) 1956, v. 85, no. 4, p. 491-497.

DESCRIPTORS: *Petrology, *Rock (Geology), Structural properties, *Symmetry (Crystallography), Crystal structure, Minerals.

Valyashko, M. G.
METHOD OF DETERMINATION OF THE ORIGIN OF POTASSIUM ROCKS BY THEIR CHEMICAL COMPOSITION, AND ITS APPLICATION TO FORMATIONS IN THE CARPATHIAN FOOTHILLS (Metod Opredeleniya Genezisa Kaliinykh Porod po Ikh Khimicheskomu Sostavu i Ego Primenenie k Mestorozhdeniyam Predkarpat'ya). [1962] [37]p. (foreign text included) 12 refs.
Order from OTS or SLA $3.60 62-20297

Trans. of Voprosy Mineralogii Osadochnykh Obrazovanii (USSR) 1956, v. 3/4, p. 252-265.

DESCRIPTORS: Sources, *Rock (Geology), *Potassium, Chemical analysis, Minerals, Salts, Mountains, Geogony.

Oceanography

SOVIET STUDIES OF ALGAL RADIOACTIVITY. 5 Apr 63 [10]p. 8 refs. JPRS: 18585.
Order from OTS $0.50 63-21526

Trans. of Okeanologiya (USSR) 1961 [v. 1] no. 2, p. 338-339, ##Akademiya Nauk SSSR. Doklady, 1961, v. 136, no. 4, p. 921-923.
##Another trans. is available from AGI $8.00

DESCRIPTORS: *Algae, *Radioactive isotopes, *Adriatic Sea, *Black Sea, Sea water, *Radioactive waste, *Strontium, *Cesium, *Cerium.

Contents:
Algal radioactivity in the Adriatic and Black Seas, by G. G. Polikarpov and V. P. Parchevskii
##Role of detritus formation in the migration of strontium-90, cesium-137, and cerium-144, by G. G. Polikarpov.

Bogdanov, K. T. and Nefed'ev, V. P.
THE NEW COTIDAL CHARTS OF SEMIDIURNAL TIDE WAVES - M_2 AND S_2 - FOR THE AUSTRALIAN ASIATIC SEAS (Novye Kotidal'nye Karty Polusutochnykh Prilivnykh Voln (M_2 i S_2) Abstralo-Aziatskikh Morei) tr. by M. Slessers. 1962 [8]p. 5 refs. HO Trans-159.
Order from OTS or SLA $1.10 62-32120

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 141, no. 5, p. 1078-1081.

DESCRIPTORS: *Oceanographical charts, *Tides, Sea water, Ocean waves, Diurnal variations, Construction.

A new method of investigation and construction of cotida charts for the Australian-Asiatic Seas is proposed. According to it, the progression of tidal waves in the open sea and their variations in different areas of the sea, dotted and crisscrossed with small and large islands, is taken into consideration. For the construction of cotidal charts in the area, the author suggests the application of the isohypse (contour) method based on hourly sea level forecasts at numerous typical points of the area. (Author)

Kul'chitskii, A. V.
ON THE HEIGHT OF ROLLING OF A WAVE AGAINST A SLOPE (O Vysote Vskatyvaniya Volny na Otkos) tr. by G. N. Gibson. June 61 [4]p. DSIR Library Communication no. 1061; NLL M.4817.
Order from OTS or SLA $1.10 62-25366

Trans. of Gidrotekhnicheskoe Stroitel'stvo (USSR) 1956, v. 25, no. 11, p. 34-36.

DESCRIPTORS: *Water waves, Fluid dynamics, Velocity, Acceleration, Gravity, Mathematical analysis, *Breakwaters.

Pastors, A. A.
HEAT EXCHANGE BETWEEN THE BALTIC SEA AND GULF OF RIGA (Teploobmen Mezhdy Baltiiskim Morem i Rizhskim Zalivom) tr. by M. Slessers. 1962 [27]p. 2 refs. HO Trans-143.
Order from OTS or SLA $2.60 62-24069

Trans. of [Akademiya Nauk SSSR]. Okeanograficheskaya Komissiya. Trudy, 1960, v. 7, p. 98-115.

DESCRIPTORS: Heat transfer, Temperature, *Baltic Sea, Gulf stream, Sea water, Volume, *Ocean currents, Sea breeze, Wind, Convection, Climatology.

The heat exchange between the Baltic Sea and the Gulf of Riga is based on water exchange through the Irbeni Väin (379,600 m^2 in cross sectional area), neglecting the insignificant quantity of water exchange occurring through Viire Kurk Strait 3 miles wide (39,000 m^2 in cross sectional area). Since the water flowing northward through the Irbeni Väin brings additional heat into the Gulf of Riga, whereas the water flowing in opposite direction takes out some of the cold, the temperature and volume of inflowing and outflowing waters must be known. The data are based on systematic measurements of water temperature, sea level fluctuations, winds and wind currents, which have conducted at the lighthouse Kolka, lightship Oviši, Ventspils, Liepāja, and elsewhere. Thus the monthly and yearly averages, as well as maximums and minimums, of heat influx into and efflux of the Gulf of Riga are found and their relationship to wind pattern and climatic conditions in the region is established. With the aid of diagrams, the heat budget is drafted and the frequencies of heat influx and efflux expressed in percentages and calories by seasons and years is determined. (Author)

Ponomarenko, G. P.
THE 10TH CRUISE OF SRV "MIKHAIL LOMONOSOV" IN THE ATLANTIC OCEAN (10-y Reis Nis "Mikhail Lomonosov" v Atlanticheskii Okean), tr. by M. Slessers. 1962 [17]p. HO Trans. 171.
Order from OTS or SLA $1.60 63-15137

Trans. of Okeanologiya (USSR) 1962, v. 2, no. 1, p. 164-172.

DESCRIPTORS: *Oceanology, *Atlantic Ocean, Salinity, Water waves, Ocean currents, Wind, *Oceanographic vessels, Oceanographic data.

The investigations carried out during the 10th cruise of "Mikhail Lomonosov" in the equatorial region of the Atlantic Ocean are summarized. The investigations deal with currents, wind, internal waves, temperature salinity, circulation and advection of heat, which were

measured by 158 drifting and 17 anchored buoy stations. For current measurements 22 BPV automatic current recorders (Alekseyev) and other instruments measuring the water circulation in surface and deep layers were used. Among the achievements are mentioned the disclosure of the existence of deep currents in the equatorial region of the Atlantic Ocean. Several graphs and tables illustrate some of the data of current velocity and direction measurements. Also methods used in lowering and lifting instruments are briefly discussed. (Translator's abstract)

Zenkevich, L. A.
THE BARENTS SEA [AND] THE WHITE SEA [Barentsovo More [and] Beloe More] tr. by M. Slessers. 1962 [67]p. HO Trans-149.
Order from OTS or SLA $6.60 62-32121

Trans. of mono. Morya SSSR Ikh Fauna i Flora (Seas of the USSR, Their Fauna and Flora) 2d rev. ed., Moscow, 1956, p. 240-273.

DESCRIPTORS: *Barents sea, *White sea, Ocean currents, Temperature, Ice, Salinity, Plants (Botany), Animals, Fisheries, *Marine biology, Marine geology, Aquatic animals.

The effect of the warm Nordkapp Current on the general pattern of vertical and horizontal water circulation, temperature and ice regime in various sections of the Barents Sea is discussed with a view to expounding the composition and quantitative distribution of fauna and flora in the sea, which forms an intermediate stage between the Atlantic and Arctic Oceans. The typical zoogeographical areas are singled out and the Atlantic, boreal (subarctic) and arctic animals, and also plants, characterizing the areas are listed. The water regime of the White Sea, which is determined mainly by the climate of the region and the continental runoff is compared with the regime of the Barents Sea affected by the warm Nordkapp Current. The differences between the fauna and flora of the water basins are analyzed, pointing out the typical specimens and variations in species inhabiting the White Sea which has a higher salinity and lower water temperature than the Barents Sea. Because the White Sea has a long shore line, the main attention is focused on the species and distribution of littoral, and also bottom organisms, comparing them with the respective forms found in the Murmansk coastal belt.

Zenkovich, V. P.
MORPHOLOGY AND DYNAMICS OF THE SOVIET COAST OF THE BLACK SEA, VOL. 1, CHAPS. 4-5 (EXCERPTS) 6 AND 9, tr. by M. Slessers. 1962 [75]p. HO Trans-141.
Order from OTS or SLA $7.60 62-33570

Trans. of mono. Morfologiya i Dinamika Sovetskikh Beregov Chernogo Morya, v. 1, Moscow, 1958, p. 68-78, 100-108, 126-146, 165-175.

DESCRIPTORS: *Black Sea, *Bloches, *Hydrology, Terrain, Climatology, Geology, Scientific research, Data, Economics, Hydrodynamics.

Contents:
On the ways of utilizing scientific data for the needs of national economy
Hydrological-climatological characterization
Geological data
Division of the Black Sea coast into sections.

Physics of the Atmosphere

DEVELOPMENT OF SOUNDING ROCKETS IN JAPAN. Mar 63 [159]p. 29 refs. NASA Technical Trans. F-87; N63-13251.
Order from OTS $3.00 63-11595

Trans. of Seisan Kenkyu (Japan) 1960, v. 12, no. 12.

DESCRIPTORS: *Sounding rockets, Rockets, *Japan, Design, Electronic equipment, *Rocket components, Radar equipment, Amplifiers, *Optical tracking, Aerodynamics, *Upper atmosphere, Geophysics, Atmosphere, Management engineering.

Contents:
The Pencil and Baby
From the Pencil rocket to the KAPPA-8, by Hideo Itokawa
The Rockoon, by Osamu Hirao and Tomo Okamoto
The electronics of the KAPPA rocket, by Noboru Takagi and Tamiya Nomura
Investigation of the upper atmosphere by rocket sounding, by Ken'ichi Maeda
The construction of the KAPPA rockets, with special consideration of the K-8, by Daikichiro Mori
Aerodynamics of the KAPPA rocket, by Akio Tamaki
Low noise amplifier for radar, by Shigefumi and Joji Hamazaki
Optical tracking of rockets, by Takakazu Maruyasu and Tsuneyoshi Uemura
Sounding rocket management and administration, by Junjiro Shimomura.

PHENOMENA IN THE UPPER ATMOSPHERE: REVIEW OF SOVIET LITERATURE. Monthly rept. no. 30 on Soviet Developments in Selected Problems in Astrophysics and Geophysics, AID Work Assignment no. 3. 14 Jan 63 [26]p. 22 refs. AID rept. P-63-11.
Order from OTS or SLA $2.60 63-15914

DESCRIPTORS: *Upper atmosphere, Atmosphere, Ionosphere, *Solar radiation, *Van Allen radiation belt, *Cosmic rays, Geophysics, *Electric fields, *Interstellar matter, *Meteorology, Reviews.

Contents:
Solar radiation and the ionosphere
Van Allen belts and cosmic rays
Telluric currents
Satellite and missile data
Meteorology of the upper atmosphere.

PHENOMENA IN THE UPPER ATMOSPHERE: REVIEW OF SOVIET LITERATURE. Monthly rept. no. 31 on Soviet Developments in Selected Problems in Astrophysics and Geophysics, AID Work Assignment no. 3. 13 Feb 63 [20]p. 18 refs. AID rept. P-63-23.
Order from OTS or SLA $1.60 63-15726

Materials in this report deal with solar radiation and the ionosphere.

DESCRIPTORS: *Upper atmosphere, Atmosphere, *Solar radiation, Ionosphere, Geophysics, Reviews.

PHENOMENA IN THE UPPER ATMOSPHERE: REVIEW OF SOVIET LITERATURE. Monthly rept. no. 32 on Soviet Developments in Selected Problems in Astrophysics and Geophysics, AID Work Assignment no. 3. 26 Feb 63 [18]p. 13 refs. AID rept. P-63-28.
Order from OTS or SLA $1.60 63-15920

DESCRIPTORS: *Upper atmosphere, Atmosphere, *Solar radiation, Ionosphere, *Van Allen radiation belt, *Cosmic rays, Geophysics, *Electric fields, *Atmospheric electricity, *Meteorological satellites, *Meteorology, Reviews.

Contents:
Solar radiation and the ionosphere
Van Allen belts and cosmic rays
Telluric currents
Atmospheric electricity
Satellite and missile data
Meteorology of the upper atmosphere.

PHENOMENA IN THE UPPER ATMOSPHERE: REVIEW OF SOVIET LITERATURE. Monthly rept. no. 33 on Soviet Developments in Selected Problems in Astrophysics and Geophysics, AID Work Assignment no. 3. 18 Mar 63 [20]p. 15 refs. AID rept. P-63-36.
Order from OTS or SLA $1.60 63-19035

DESCRIPTORS: *Upper atmosphere, Atmosphere, *Solar radiation, Ionosphere, Cosmic rays, Nuclear explosions, Meteorology, Reviews.

Contents:
Solar radiation and the ionosphere
Van Allen belts and cosmic rays
Nuclear bursts in the atmosphere
Meteorology of the upper atmosphere.

Bibl, K. and Delobeau, F.
IONOSPHERIC OBSERVATIONS DURING THE TOTAL SOLAR ECLIPSE OF THE 30 JUNE 54 [Ionospharische Beobachtungen Wahrend der Totalen Sonnenfinsternis vom 30 June 54] tr. by J. M. Sprecher. Apr 61, 16p. 12 refs.
Order from OTS or SLA $1.60 62-23847

Trans. of Zeitschrift für Geophysik (West Germany) 1955, v. 21, no. 4, p. 215-228.

DESCRIPTORS: *Ionosphere, *Solar eclipses, Height, Electron density, Ionization, Recombination reactions, Absorption.

Boenkov, M. V.
THE DIURNAL COURSE OF THE CRITICAL FREQUENCIES OF THE E-LAYER OF THE IONOSPHERE, tr. by Tatiana O. Nennsberg. 5 Oct 61 [29]p. (tables omitted) 12 refs.
Order from OTS or SLA $2.60 63-15790

Trans. of Akademiya Nauk Turkmenskoi SSR, Ashkhabad. Institut Fiziki i Geofiziki. Trudy, 1958, v. 5, p. 47-74.

DESCRIPTORS: *Ionosphere, Frequency, *Diurnal variations, Night sky, *Ionization, *Geophysics, Atmosphere.

Dikii, L. A.
THE INFLUENCE FUNCTION FOR SMALL PERTURBATIONS OF A ISOTHERMALLY STRATIFIED, BAROCLINIC ATMOSPHERE. [1962] 6p. 1 ref.
Order from OTS or SLA $1.10 63-10854

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 1, p. 97-100.

DESCRIPTORS: *Atmosphere, Functions, Acoustics, Gravity, Integral transforms, Integral equations, *Perturbation theory.

Gruza, G. V.
MACROTURBULENCE IN THE GENERAL CIRCULATION OF THE ATMOSPHERE. July 62[130]p. 84 refs. AmMetSoc T-R-394+. AD-297 513
Order from OTS or SLA $10.10 63-15666

Trans. of mono. Makroturbulentnost' v Obshechei Tsirkulyatsii Atmosfery, Leningrad, 1961 [102]p. A review trans. is available from OTS or SLA $1.10 as 62-23698, AID-62-20, 8 Feb 62, 3p.

DESCRIPTORS: *Atomosphere, *Atmospheric motion, Meteorology, Northern hemisphere.

This book reports the results of original investigations of the general circulation of the atmosphere using zonal characteristics of macroturbulence in the temperate latitudes of the northern hemisphere. Quantitative data on the energetic state of the atmosphere for two years are cited, the geographic distribution of the components of kinetic energy of the atmosphere is given, and the regularities in variations of general circulation are described. (Author)

Mityakova, E. E., Mityakov, N. A., and Rapoport, V. O.
THE MEASUREMENT OF ELECTRON CONCENTRATION IN THE IONOSPHERE AND IN THE INTERPLANETARY SPACE (K Voprosu ob Izmerenii Elektronnoi Kontsentratsii v Ionosfere i Mezhplanetnom Prostranstve) tr. by V. A. Solodukhin. [1962] [16]p. (foreign text included) 14 refs. [CSIRO] Trans. no. 6098
Order from OTS or SLA $1.60 63-15976

Trans. of #Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1960, v. 3, no. 6, p. 949-956. Another trans. is available from OTS or SLA $1.60 as 62-13627, MDF M-143 [1961] 11p.

DESCRIPTORS: *Ionosphere, Analysis, *Electrons, Density, Measurement, Satellite vehicles, Van Allen radiation belt.

For abstract see Technical Translations 7:210, 1962

Tsymbal, N. T.
AN INVESTIGATION OF THE FINE STRUCTURE OF THE F LAYER OF THE IONOSPHERE. 5 Mar 63 [10]p. 7 refs. FTD-TT-62-1388., AD-298 650
Order from OTS or SLA $1.10 63-19089

Unedited rough draft trans. of Mezhdunarodnyi Geofizicheskii God. Informatsionnyi Byulleten' (USSR) 1961, no. 3, p. 19-23.

DESCRIPTORS: *Ionosphere, Atmosphere, Electromagnetic waves, Scattering, Wave analysis, Measurement.

Presented are the results of an experimental investigation of the degree of heterogeneity β^2 and angular scattering of waves reflected from the F layer of the ionosphere during the period from the end of August, 1957, through May, 1958. The rms velocities of the chaotic motion of the heterogenities v_0 and their horizontal dimensions are determined from measurements made from September through December, 1957. (Author)

ENGINEERING

MINING AND METALLURGY QUARTERLY, 1962, NO. 4. 1963 [64]p. 32 refs. PL-480 Int.
Order from OTS $0.75 62-19467-4

Trans. of Rudarsko-Metalurski Zbornik (Yugoslavia) 1962, no. 4, p. 313-339, 341-351, 353-364.

DESCRIPTORS: *Economic geology, Lead, Zinc, Minerals, Deposits, Ores (Metal Sources), Analysis, *Furnaces, Industrial equipment, *Yugoslavia, *Mining engineering, *Calorimetry, Tin compounds, Bismuth compounds, Geophysical prospecting, *Metallurgy.

Contents:
Genesis of the East Alpine lead-zinc mineral deposits, by S. Grafenauer
Analysis of the operation of Yugoslav mill furnaces, by D. Pavko
A study of the installation of automatic regulation for the hoisting plant in the Mezica lead mines, by G. Ursic
Differential thermal analysis of the binary systems Sn-Bi and Pb-Sn, by B. Dobovisek and N. Smajic
The problem of exploration of the lead-zinc occurences in Slovenia, by I. Strucl.

PROTECTIVE STRUCTURES AND COMPONENTS: REVIEW OF SOVIET LITERATURE. Rept. no. 7 reviewing Soviet Literature on Ground Support Equipment, AID Work Assignment no. 13. 20 Mar 63 [23]p. 14 refs. AID rept. P-63-38.
Order from OTS or SLA $2.60 63-19215

DESCRIPTORS: *Reviews, Protective shelters, Buildings, *Ground support equipment, Transports, Launching sites, Containers, Preservation, Storage, Construction.

Contents:
Operational employment and philosophy
Missile data
Facilities
Transport
Launch site
Ground support equipment
Natural environmental conditions
Personnel
Research and development facilities
Packaging, preservation and storage.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 64. 9 Apr 63 [34]p. JPRS: 18615.
Order from OTS $1.00 63-21542

Trans. of Novye Tovary (USSR) 1962, no. 12, p. 1; Kinomekhanik (USSR) 1962, Dec, p. 21-23; Planovoe Khozyaistvo (USSR) 1963 [v. 40] no. 1, p. 70-72; and from Kommunist Tadzhikistana (USSR) 1962, 30 Sep, p. 4; Pravda Vostoka (USSR) 1962, 26 Sep, p. 2; Pravda Ukrainy (USSR) 1962, 26 Sep, p. 3; Radio Programmy (USSR) 1963, 20 Jan.

DESCRIPTORS: *Industrial production, *Precision equipment, *Gas burners, *Hygrometers, Cotton, Air conditioning equipment, *Radio receivers, *Acoustic equipment, *Motion-picture photography, Industrial plants, *Sound reproduction systems.

Contents;
New gas appliances at the Dushanbe exhibit
Delay in testing an electrohygrometer for the determination of moisture in raw cotton, by I. Bolotin and E. Krupko
"Ukraina" room air-conditioner produced by the Khar'kov industrial machine building plant
"Fakel" radiophonograph
Radiophonograph "Estoniya-3", by B. Semashko
Results of the activity of the motion picture industry in 1962, by G. Gnevyshev
Grant more authority to plant directors: experience of the Odessa Krasnyi Oktyabr' plant, by M. Alekseev.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 66. 10 Apr 63 [28]p. JPRS:18643.
Order from OTS $0.75 63-21556

Trans. from Trud [Moscow] (USSR) 1962, 11 Oct, p. 3; Kazakhstanskaya Pravda (USSR) 1962, 3 Oct, p. 2; Sovetskaya Belorussiya (USSR) 1962, 14 Oct, p. 2; Sovetskaya Litva (USSR) 1962, 12 Oct, p. 4; Pravda, Leningrad (USSR) 1962, 12 Oct, p. 4; 17 Oct, p. 4.

DESCRIPTORS: *Industrial production, *Precision equipment, *X-ray generators, *Wrist watches, Quality control, *Electronic equipment, *Laboratory equipment, *Lubricants, *Television receivers, Printed circuits, *Soldering, *Magnetic recording systems.

Contents:
Prospective uses of the video tape recorder
X-ray machines "11-C-1" and "11-F-1" go into production at Aktyubrentgen plant in Aktyubinsk, by G. Gukasov
Qualified and independent inspection service key to increase in quality at Minsk watch factory, by P. Tkachuk
Advertisement-sale of electronic signaling devices, timers, rectifiers, audio signaling equipment
Portable laboratory designed for on board ship testing of marine engine lubricants
Automatic soldering machine, printed circuit permit mechanization of television assembly operations, by A. Severov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 65. 9 Apr 63 [63]p. JPRS: 18636.
Order from OTS $1.75 63-21553

Trans. of Kinomekhanik (USSR) 1963, no. 1, p. 38-39, 46; Radio, Moscow (USSR) 1963, no. 1, p. 2-5, 39, 49, 51; Sakharnaya Promyshlennost' (USSR) 1963 [v. 37] no. 1, p. 54-58; Torfyanaya Promyshlennost' (USSR) 1963 [v. 40] no. 1, p. 13-14; and from Rabochaya Gazeta (USSR) 1963, 24 Jan, p. 2.

DESCRIPTORS: *Industrial production, *Precision equipment, *Television equipment, *Cathode ray tubes, *Motion picutre photography, *Photographic equipment, Conferences, *Plastics, Electronics, Radio, *Electronic equipment, *Magnetic recording systems, *Radio receivers, *Blowers, *Electric cables.

Contents:
Low quality of rebuilt television picture tubes, by S. Kuz'minskii
Conference on the quality of motion picture equipment, by M. Maksimenko
Spare parts from plastics, by V. Korovkin
The role of radioelectronics in building communism
On the poor quality and insufficient supply of manufactured consumer goods, by V. Goncharov and A. Mstislavskii
The Kometa tape recorder, by L. Tsyganova
The atmosfera-2m portable transistorized receiver, by N. Kartsev
The TG-80-1.6 gas blower for saturating gas, by D. A. Tsukermand and N. P. Oboyakov
Results of experimental use of the GTSh brand of electrical cable, by A. Z. Martynov.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 67. 11 Apr 63 [40]p. JPRS: 18654.
Order from OTS $1.25 63-21560

Trans. from Ekonomicheskaya Gazeta (USSR) 1963, [no. 10(83)] 2 Mar, p. 7-12.

DESCRIPTORS: *Industrial production, *Precision equipment, Electronics, *Electronic equipment, Automation, Science, Engineering, Economics, Scientific research, Materials, Machines, *Reliability (Electronics), *Computers, *Packaged circuits.

Contents:
New developments in electronics are discussed
Production of electronic equipment must be stepped up, by K. Martyushov
Increasing labor productivity by means of electronic equipment, by M. Rakovskii
The unity of science, engineering and economics, by G. Kazanskii
The case for expanding basic research in electronics
The electronics industry requires first-rate materials
The electronics industry needs modern equipment
Reliability of electronic components remains a problem
The need for specialization in the manufacture of package components
The technology of the future
Using computers in industry.

Greiner, J.
FIELD STRENGTH AND GAP DISTRIBUTION FUNCTION AT THE RECORDING HEAD WITH AND WITHOUT TAPE. [1962] 16p. (figs. omitted) 5 refs.
Order from SLA $1.60 62-18693

Trans. of Nachrichtentechnik (German Democratic Republic) 1956, v. 6, no. 2, p. 63-70.

DESCRIPTORS: *Magnetic recording systems, Magnetic fields, Distributions, Statistical functions, Transformations (Mathematics), Models (Simulations), Magnetic tape.

Muchnik, V. S.
MASTERING THE TECHNOLOGY OF UNDERGROUND HYDRAULIC EXTRACTION OF COAL IN INDUSTRIAL PRACTICE. [1962] [6]p. National Coal Board Trans. A. 350/A. B.; Bureau of Mines Trans. no. 311 and BBCR no. 63.
Available on loan from OTS 63-19224

Trans. of Ugol' (USSR) 1952, v. 27, no. 4, p. 12-14.

DESCRIPTORS: *Hydraulic fracturing, *Coal, *Mining engineering, Hydraulic research, Water, Jets, Coal mines, *Industrial research, Hydraulic systems.

Muchnik, V. S.
UNDERGROUND HYDRAULIC EXTRACTION OF COAL [1962] [5]p. National Coal Board Trans. A. 572/A. B.; Bureau of Mines Trans. no. 305 and BBCR no. 51.
Order from OTS or SLA $1.10 63-19222

Trans. of [Mekhanizatsiya i Automatizatsiya Proizvodstva] (USSR) 1953 [v. 7] no. 2, p. 10-12.

DESCRIPTORS: *Hydraulic fracturing, *Coal, Hydraulic systems, *Mining engineering, Water, Jets, Processing, Coal mines, Hydraulic research, Transportation.

Muchnik, V. S., ed.
THE UNDERGROUND HYDRAULIC EXTRACTION OF COAL IN THE KUZNETSK BASIN. [1962] [46]p. Bureau of Mines Trans. 304 and BBCR no. 52.
Order from OTS or SLA $4.60 63-19223

Trans. of unidentified Russian mono, Moscow, 1953.

DESCRIPTORS: *Hydraulic fracturing, *Coal, Hydraulic systems, *Mining engineering, Water, Jets, Processing, Transportation, Coal mines, Hydraulic research.

Chemical Engineering

METHOD FOR EVAPORATION OF LIQUIDS, tr. by J. R.-P. 31 Oct 62, 3p.
Order from OTS or SLA $1.10 63-13000

Trans. of German patent 414,593, cl. 12a, gr. 2, by Rotopulsor Aktiengesellschaft, Switzerland, pat. from 6 June 23, pub. 4 June 25.

DESCRIPTORS: *Evaporation, Liquids, *Atomization, Gas flow, Desiccants, Cooling, Centrifuges, Purification, Vaporization.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 62. 9 Apr 63 [36]p. JPRS: 18614.
Order from OTS $1.00 63-21541

Trans. of 10 selected articles from Dec 62-Jan 63 issues of 7 Soviet newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, Industrial plants, *Glass textiles, Hydrolysis, *Synthetic fibers, *Fertilizers, *Containers, *Lactams, Economics.

Contents:
Expanding production at the Okhta chemical combine, by K. Grigor'eva and I. Strogov
The development and uses of fiberglass, by V. Shvili
The Andizhan hydrolysis plant exploits its inner potential, by V. Krinitskii
Expedite the chemical-industry projects
Chemical fiber production in the Ukraine, by Yu. Borodkin
Introduce container hauls of fertilizers, by Yu. Shcheglov
Improving the Caprone production techniques
Expedite the development of chemical industry in Azerbaidzhan
Obstacles to the expansion of the Maardu chemical combine, by L. Luus and others
Pay more attention to chemical-industry projects in Kuibyshevskaya oblast, by L. Kovalev

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 63. 10 Apr 63 [38]p. JPRS: 18645.
Order from OTS $1.00 63-21558

Trans. from Trud, Moscow (USSR) 1963, 4 Jan; Izvestiya (USSR) 1963, 9 Jan; Stroitel'naya Gazeta (USSR) 1963, 23 Jan; Pravda, Moscow (USSR) 1963, 10 Jan; 13 Jan; Ekonomicheskaya Gazeta (USSR) 1963, no. 2[75] p. 2-3.

DESCRIPTORS: *Industrial production, *Chemical industry, *Mining engineering, Phosphorites, *Synthetic fibers, Industrial plants, Construction, Synthetic rubber, Plastics.

Contents:
Complete the Kingisepp phosphorite mine on schedule, by G. Razin and others
Research into high-strength fibers, by M. Koton and S. Frenkel'
Expedite the construction of chemical enterprises in Yaroslavl', by L. Levina
Expedite the expansion of the Efremov synthetic rubber plant, by N. Antonov
Improve the design of chemical-industry projects in Kuibyshevskaya oblast, by V. Muravlenko
Expand the chemical industry in 1963
Increase output at the Nizhnii Tagil plastics plant, by E. Vlaskin
The program of the Mytishchi construction plastics combine, by A. Bykov.

Angli, Jeronimo.
SOME COMPARISONS IN THE METHODS OF DETERMINING THE WATER IN PETROLEUMS. [1962] 11p. (refs. omitted) 1 ref.
Order from SLA $1.60 63-10486

Trans. of [Asociacion] Quim[ica] Argentina. Anales, 1920, v. 8, p. 105-117.

DESCRIPTORS: *Petroleum, *Water, Quantitative analysis.

Barishpolets, V. T.
OPERATION OF A CENTRIFUGAL FROTH SEPARATOR, tr. by A. L. Monks. [1962] 5p. 10 refs.
Order from OTS or SLA $1.10 AEC-tr-5379

Trans. of Khimicheskaya Promyshlennost' (USSR) 1962, no. 2 [p. 121-122].

DESCRIPTORS: Separation, *Centrifuge separation, Machines, *Foams, Hydrodynamics, Fluid mechanics, Material separation, *Flotation (Separation), *Fluid flow, Gases, Liquids.

Boyer, A. F. and Lahouste, J.
CAN FISSURING OF COKE BE FORECAST IN THE CONTROL LABORATORY? Sep 59 [8]p. 2 refs.
Order from SLA $1.10 62-14522

Trans. of Industr[ie] Chim[ique] Belg[e] 1954, v. 20, spec. no, p. 29-32 (International Congress of Industrial Chemistry (no. 27) [Brussels] Sep 54. Papers, v. 2).
Another trans. is available from BISI as BISI-1575 [1960].

DESCRIPTORS: *Coke, Coal, Physical properties, Quality control, Fracture (Mechanics).

For abstract see Technical Translations 3: 423, 1960.

Butkov, N. A.
CRACKING (O Krzkinge). [1962] [9]p. (foreign text included).
Order from OTS or SLA $1.10 63-10363

Trans. of Neft[yanoe] Khoz[yaistvo] (USSR) 1928 [v. 16] no. 11/12, p. 674-677.

DESCRIPTORS: *Hydrocarbons, Decomposition, Thermodynamics, Theory, Experimental data, *Gasoline.

Ciborowski, Stanislaw.
STUDIES ON BENZENE HYDROGENATION TO CYCLOHEXANE (Badania nad Uwodornieniem Benzenu do Cycloheksanu) tr. by G. Niemczynow. 1963 [8]p. 16 refs. PL-480 Agr.
Order from OTS $0.50 61-11376

Trans. of Przemysl Chemiczny (Poland) 1960, v. [16]39, no. 4, p. 228-231.

DESCRIPTORS: *Benzenes, Hydrogenation, *Cyclohexanes, Synthesis, Statics, Pressure, Catalysts, *Alumina-nickel catalysts, *Cobalt catalysts, Thorium

Studies concerned with the production of cyclohexane from benzene on an industrial scale, with special consideration given to the problem of the completion of the hydrogenation reaction.

Dudorov, V. V., Neiman, M. B., and Lukovnikov, A. F.
OXIDATION OF POLYPROPYLENE AT HIGH OXYGEN PRESSURES: DEPENDENCE OF INDUCTION PERIODS UPON TEMPERATURE AND PRESSURE (Okislenie Polipropilena pri Vysokikh Davleniyakh Kisloroda) tr. by M. E. July 62 [11]p. 7 refs. I-1644.
Order from OTS or SLA $1.60 62-33090

Trans. of Plasticheskie Massy (USSR) 1961, no. 12, p. 3-7.
Another trans. is available from ICE in v. 2, no. 2, $15.00/year.

DESCRIPTORS: *Chemical engineering, *Propenes, *Polymers, Oxidation, Pressure, Temperature.

An increase in oxygen pressure causes intensification of the destruction process, such that its rate becomes comparable with the rate of oxygen absorption. Destruction products are generated from the polypropylene film in accordance with the first order reaction law. A method is proposed for considering liberation of volatile products of oxidation destruction for studying the true absorption of oxygen during oxidation. The dependence of induction periods of polypropylene oxidation upon temperature and pressure was studied. The phenomenon of flashing of polypropylene at a temperature of 140° and pressures above 60 t.a., a was discovered. A law of dependence of induction periods of polypropylene oxidation upon temperature and pressure was established. (Author)

Edeleanu.
REFINING OF PETROLEUM WITH LIQUID SULFUR DIOXIDE. [1962] [25]p. (figs. refs. omitted).
Order from SLA $2.60 63-10469

Trans. of Angew[andte] Chem[ie] (Germany) 1923, v. 36, 26 Nov, p. 575-584.

DESCRIPTORS: *Petroleum, Hydrocarbons, Liquids, *Sulfur compounds, *Dioxides, Decomposition, Experimental data.

Egorov, N. N., Dmitriev, M. M., and Zykov, D. D
PURIFICATION OF GASES WITH ETHANOLAMINE SOLUTIONS. Oct 52, 24p.
Order from OTS or SLA $2.60 63-10394

Trans. of mono. Removal of Sulfur from Coke-Oven and Other Fuel Gases, Moscow, 1950, chap. 13, p. 110-141.
Other translations are available from ATS as ATS-RJ89, 24p. and on loan from SLA as R-2082.

DESCRIPTORS: *Purification, *Gases, *Ethanols, *Amines, Solutions, Absorption (Physical), Industrial equipment, Design, Chemical engineering, Desulfurization, Fuels.

Graetz, Andre.
RECENT PROGRESS IN THE THEORETICAL KNOWLEDGE OF THE MECHANISM OF CRACKING. [1962] 15p. 1 ref.
Order from SLA $1.60 63-10465

Trans. of Revue Pétrolifère (France) 1930, 5 Apr, p. 469-472.

DESCRIPTORS: *Hydrocarbons, Decomposition, Theory, Temperature, Time, Pressure, *Gasoline.

Grubitsch, Heribert.
PROCESS AND DEVICE FOR THE STORING OF CHLORINE DIOXIDE (Verfahren und Vorrichtung zum Speichern von Chlordioxyd). [1962] [5]p. (foreign text included).
Order from OTS or SLA $1.10 62-18732

Trans. of German patent 1,100,001, G 28119 IVa/12i, cl. 12i 4, internat. cl. C 01 b, applied 9 Oct 59, pub. 23 Feb 61.
Another trans. is available from OTS or SLA $1.10 as 62-14766 [1962] 3p.

DESCRIPTORS: *Chlorine compounds, Dioxides, *Gas cylinders, Storage.

For abstract see Technical Translations 8: 999, 1962.

Gukhman, L. and Plotko, A.
A NEW SURAKHANY OIL. [1962] 5p.
Order from OTS or SLA $1.10 63-10693

Trans. of Azerb[aidzhanskoe] Neft[yanoe] Khoz[yaistvo] (USSR) 1930 [v. 10] no. 9, p. 102-103.

DESCRIPTORS: Oils, *Petroleum, Production, Distillation, Chemical analysis.

Kautter, C. T. and Leitenberger, W.
PLANT SCALE PRODUCTION OF HYDROGEN CYANIDE ACCORDING TO ANDRUSSOW. [1962] 13p. 7 refs.
Order from SLA $1.60 62-20044

Trans. of Chemie-Ing[enieur]-Techn[ik] (West Germany) 1953, v. 25, no. 12, p. 697-701.

DESCRIPTORS: *Hydrocyanic acid, Industrial production, Methanes, Ammonia, Air, Purification, Chemical reactions, *Towers (Chemistry), *Platinun catalysts, Rhodium alloys, Natural gas.

This is a description of a large industrial plant for the synthesis of hydrogen cyanide from methane, ammonia and air. The raw materials are liquid ammonia and so-called Ruhr pipe-line gas, which was mixed with water-gas and converted in methane. The plant operates with a yield of 70% of methane input or 60% of ammonia input, respectively. 30% of the ammonia is recovered as ammonium sulphate. Details of the installation of the catalyst wire nets are given which consist of platinum plus 10% rhodium wires and which, thus far, have a life of about 4000 hours. The process seems to offer particular advantages where natural gas is available since the cost of Ruhr pipe-line gas constitutes the principal cost item. (Author)

Kel'tsev, V. V. and Tesner, P. A.
CARBON BLACK, tr. by A. Schidlovskii. 6 Nov 52, 16p.
Order from OTS or SLA $1.60 62-19041

Partial trans. (extracts) from mono. Sazha, Svoistva, Proizvodstvo i Primenenie (Carbon Black, Properties, Production and Uses) Moscow/Leningrad, 1952.

DESCRIPTORS: *Carbon black, Physical properties, Production, *Pigments, Electrodes, Dry cells, Plastics, *Rubber, Hydrogen, Physical chemistry.

Linde, G.
EFFICIENCY GRADE OF A SIEVE TRAY IN THE TEMPERATURE RANGE OF LIQUID AIR (Wirkungsgrad eines Siebbodeus in Temperaturgebiet des Flüssigen Luft). [1962] [24]p. 16 refs.
Order from SLA $2.60 62-20130

Trans. of Chem[ie]-Ing[enieur]-Techn[ik] (West Germany) 1955, v. 27, no. 11, p. 661-668.

DESCRIPTORS: *Liquefied gases, Mixtures, *Oxygen, *Nitrogen, *Argon, *Separation, Rectifiers, Strainers, *Towers (Chemistry), Vapor pressure, Foams, Low temperature research.

On a single experimental tray which had been designed in such a manner that the intermixing of the liquid was greatly promoted, the transfer ratio (gain ratio), pressure drop of the vapor, and the height of the foam or bubble layer were determined as a function of composition of the mixtures of O_2-N_2, O_2-A, and A-N_2. From the transfer ratio, the unit efficiency of the sieve tray was determined with the aid of theoretical reasoning. With the N_2- containing mixtures there was a certain concentration range in which the liquid in the tray was broken up almost completely into foam, while outside of this range and also in the case of O_2-A mixtures a thick layer of clear liquid with only a thin supernatant foam layer was formed. In the first case, the efficiency per unit was generally higher and the pressure drop smaller than with bubbling mixtures. The data obtained with the foaming O_2-N_2 and A-N_2 mixtures resulted in a relationship which can be used for the approximate calculation of the unit efficiency from the height of the foam layer, the pressure drop and the vapor velocity. (Author)

Lobusevich, N. P., Trofimova, I. V. and others.
THE INFLUENCE OF THE ADDITION OF CERTAIN METALS ON THE ACTIVITY OF SILICON/COPPER ALLOYS IN THE SYNTHESIS OF METHYLCHLORSILANES. [1962] [5]p. [DSIR] NLL M.3630.
Order from OTS or SLA $1.10 62-25276

Trans. of mono. [Khimiya i Prakticheskoe Primenenie Kremneorganicheskikh Soedinenii, Trudy Konferentsii] Chemistry and Practical Applications of Organosilicon Compounds, Proceedings of a conference held in Leningrad, 1958 (pub. Leningrad, 1961) v. 6, p. 28-31

DESCRIPTORS: *Silanes, Chlorine compounds, Methyl radicals, Synthesis (Chemistry), *Silicon alloys, *Copper alloys, Impurities, Aluminum, Iron, Calcium, Bismuth, Tin, Lead, Tables.

Lozovoi, A. V., Muselevich, D. L. and others.
HYDROGENATION CATALYSTS ON ALUMINOSILICATE BASIS, COMMUNICATION II. [1962] 8p. 5 refs.
Order from OTS or SLA $1.10 63-10233

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, 34, no. 10, p. 2295-2300.
Other translations are available from ICE in v. 2, no. 2, $15.00 and ATS $10.50 as ATS-70P58R [1962] 8p.

DESCRIPTORS: *Hydrogenation, Catalysts, *Silicates, *Aluminum compounds, *Alumina-silica catalysts, Oils, *Coal tars, Vapors.

New catalysts for vapor phase hydrogenation were prepared from natural alumino-silicates, activated by HF, with additions of Cr, Zn, Fe, Ni-oxides and sulfides and of ~1% W. Their high activity was observed in hydrogenation of distillates of semicoked tar under 600 atm. of pressure and at 480° to 530°C. The catalyst, composed of activated ascanite and CR, Zn, W oxides and sulfides, was the most interesting and had a completely satisfactory stability. Material balance of the operation was shown, and composition and properties of the liquid products and gaseous hydrocarbons were investigated. Aromatic compounds predominate in the former, including the C_6-C_8. (Author)

Nemtsov, M. S.
EFFECT OF PRESSURE UPON A CRACKING PROCESS. [1962] 19p. 44 refs.
Order from OTS or SLA $1.60 63-10412

Trans. of Neftyanoe Khozyaistvo (USSR) 1933, v. 25, no. 10, p. 41-45.

DESCRIPTORS: *Pressure, *Hydrocarbons, *Decomposition, Gasoline, Stability, Antiknock.

Ostroumov, V. V.
ELECTRODEPOSITION OF PALLADIUM FROM SOLUTIONS CONTAINING A CAUSTIC ALKALI (Elektroliticheskoe Osazhdenie Nalladiya iz Rastvorov Soderzhashchikh Edkuyu Shcheloch'). Sep 61 [17]p. (foreign text included) 1 ref. NLL M. 3491.
Order from OTS or SLA $1.60 62-23959

Trans. of #Zhur[nal] Prikl[adnoi] Khim[ii] (USSR) 1958, v. 31 [no. 1] p. 77-83.

DESCRIPTORS: *Palladium, Electrolytes, *Electrodeposition, Theory, Solutions, Hydroxides, Phase studies, Electrochemistry.

Conditions of preparation of palladium electrolytes with a caustic alkali, having adequate stability during storage, have been established. Conditions have been found under which bright, mirror-like palladium layers can be electrodeposited on bulky metallic components. A hypothesis has been proposed according to which the solid β-phase forms on the cathode at current densities exceeding the value of the limiting current. Upon discontinuation of electrolysis, the β-phase decomposes into the α-phase and hydrogen and, subsequently, into metal and hydrogen. It is shown that, upon attainment of the limiting value of current, black, porous deposits are formed in a narrow region of current densities. However, a further increase in current density results once again in the formation of compact, bright palladium. (Author)

Petersen, Otto.
CALOMEL ELECTRODE, tr. by F. H. B. 29 Jan 63, 4p. (figs. omitted) 1 ref.
Order from OTS or SLA $1.10 63-15451

Trans. of German published application (Patentanmeldung) no. F 9115 IXb/42 L, cl. 42/1, gr. 3/05, by Farbenfabriken Bayer AG, appl. 21 May 52, pub. 15 Sep 55.

DESCRIPTORS: *Glass electrodes, *Mercury electrodes, Chlorides, Potassium compounds, Hydrogen ion concentration.

Petrosyan, V. I., Kosyreva, R. V. and others.
COMPOSITION OF PRODUCTS AND KINETICS OF THE CRACKING OF BUTANES INITIATED BY ADDING ETHYLENE OXIDE. [1962] [6]p. 17 refs.
Order from OTS or SLA $1.10 63-15714

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 132, no. 5, p. 1103-1106.

DESCRIPTORS: Decomposition, Kinetic theory, *Butanes, *Ethylene oxide, Chemical analysis, Chromatographic analysis.

Potolovskii, L. and Prozumentik, M.
THE GASEOUS CRACKING-BENZENE. [1962] [9]p. 3 refs.
Order from OTS or SLA $1.10 63-10695

Trans. of Azerbaidzhanskoe Neftyanoe Khozyaistvo (USSR) 1934 [v. 14] no. 1, p. 60-62.

DESCRIPTORS: *Benzenes, *Gases, Decomposition, Adsorption, Distillation, Hydrocarbons, Production, Chemical engineering.

Pringuet, A.
RECENT PROGRESS IN THE REFINING OF VEGETABLE OILS: DEACIDIFYING STEAM TREATMENT, [1962] 10p.
Order from SLA $1.10 62-20376

Trans. of Seifen-Öle-Fette-Wachse (West Germany) 1962, v. 88, no. 8, p. 191-195.

DESCRIPTORS: *Refineries, *Vegetable oils, Processing, Fatty acids, Neutralization, Separation, Steam, Odors.

The article deals with a new development in the steam treatment of vegetable oils for the purpose of deacidification and deodorization. The theoretical principles of steam treatment are also discussed; the development of refining in Italy and France are exhaustively dealt with. (Author)

Romanov, N. R.
GLUTEN AS A FLOCCULANT IN SOME FLOATATION PULPS, tr. by R. Hennefeld. [1962] [9]p. 4 refs. Trans. no. CRL/T. 724; [DSIR NLL] M. 3664.
Order from OTS or SLA $1.10 62-25270

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zaved[enii], Tsvetnaya Metallurgiya (USSR) 1959 [v. 2] no. 2, p. 22-28.

DESCRIPTORS: *Ores (Metal sources), Lead, Zinc, Tungsten, Material separation, *Flotation (Separation), *Gluten, Coagulation, Chemical precipitation.

The flocculating effect of gluten was investigated by means of plotting the settling curves for various pulps and also by microscopic study. It was found that gluten is a good flocculant for pulps at relatively low consumption (50 to 200g of gluten per ton dry basis) and that a moderate excess of gluten does not cause the flocculation indices to deteriorate. Standing of the gluten suspension in open air for a day does not affect the flocculating property of gluten; more prolonged standing (2to4 days) slightly reduces the (settling rate) of the pulp as a result of the fermentation of proteins. The use of gluten for flocculation of flotation concentrates from several beneficiation plants gave good results and the settling rate increased by a factor of 1.3 to 3, and the quality of the supernatant liquid was considerably improved. Flocculation of the pulp by gluten somewhat increases the specific productivity of the filter with the same moisture content of the cake and cleaner filtrate. The cheapness of the gluten as compared with other organic flocculants (starch, dextrin) which are used for the thickening of pulps and also its strong flocculating effect makes it possible to recommend gluten for testing and industrial application in some beneficiation and hydrometallurgical plants. (Author)

Schulte-Vieting, H. -J.
THE HEAT AND MATERIAL TRANSFER BETWEEN VAPOR BUBBLE AND LIQUID IN OXYGEN/NITROGEN MIXTURES (Der Wärme- und Stoffaustausch zwischen Dampfblase und Flüssigkeit in Sauerstoff/Stickstoff-Gemischen). [1962] [20]p. 27 refs.
Order from SLA $1.60 62-20129

Trans. of Chem[ie]-Ing[enieur]-Techn[ik] (West Germany) 1955, v. 27, no. 8/9, p. 507-512.

DESCRIPTORS: *Liquefied gases, Mixtures, *Oxygen, *Nitrogen, Purification, Distillation, Rectifiers, Towers (Chemistry), *Heat transfer, *Mass transfer, Vapors, *Bubbles, Geometry, Dynamics, Velocity.

Skichko, T.
A COMBINED REACTOR AND CODE HEATER. [1963] 3p.
Order from ATS $4.50 ATS-91Q66R

Trans. of Neftyanik (USSR) 1960, v. 5, no. 12, p. 21-22.

DESCRIPTORS: *Coke, *Heaters, *Reactors.

Terashi, Michio, Hasegawa, Toshio and others.
THE SYNTHESIS OF TEREPHTHALIC ACID FROM PHTHALIC ANHYDRIDE. [1962] [58]p. 16 refs.
Order from SLA $5.60 62-18865

Trans. of Yuki Gosei Kagaku Kyokai Shi (Japan) 1962, v. 20, p. 40-55.

DESCRIPTORS: *Synthetic fibers, *Phthalic acids, Synthesis (Chemistry), *Phthalic anhydride, Thin films, Catalysts, Potassium, Separation, Sublimation.

Trofimova, I. V., Andrianov, K. A. and others.
CONTROLLING THE COMPOSITION OF PRODUCTS OF THE DIRECT SYNTHESIS OF METHYL AND ETHYLCHLORSILANES IN A FLUIDIZED BED. [1962] [6]p. [DSIR] NLL M.3631.
Order from OTS or SLA $1.10 62-25316

Trans. of mono. [Khimiya i Prakticheskoe Primenenie Kremneorganicheskikh Soedinenii, Trudy Konferentsii] Chemistry and Practical Applications of Organosilicon Compounds, Proceedings of a conference held in Leningrad, 1958 (pub. Leningrad, 1961) v. 6, p. 25-27

DESCRIPTORS: *Silanes, Chlorine compounds, Methyl radicals, Ethyl radicals, Synthesis (Chemistry), Fluidized solids, Tables.

Vabel', Ya. I.
KINETICS OF THE DIRECT SYNTHESIS OF ETHYLCHLORSILANES [O Nekotorykh Voprosakh Kinetiki Pryamogo Sinteza Etilkhlorsilanov]. [1962] [7]p. (discussion omitted). [DSIR] NLL M.3629.
Order from OTS or SLA $1.10 62-25277

Partial trans. (p. 31-35) of mono. [Khimiya i Prakticheskoe Primenenie Kremneorganicheskikh Soedinenii, Trudy Konferentsii] Chemistry and Practical Applications of Organosilicon Compounds, Proceedings of a Conference held in Leningrad, 1958 (pub. Leningrad, 1961) v. 6, p. 31-37.

DESCRIPTORS: *Silanes, Chlorine compounds, Ethyl radicals, Synthesis (Chemistry), Chlorides, Silicon alloys, Copper alloys.

Vabel', Ya. I.
KINETICS OF THE DIRECT SYNTHESIS OF ETHYLCHLORSILANES; DISCUSSION [O Nekotorykh Voprosakh Kinetiki Pryamogo Sinteza Etilkhlorsilanov]. [1962] [2]p. [DSIR] NLL M.3628.
Order from OTS or SLA $1.10 62-25278

Partial trans. (p. 35-37) of mono. [Khimiya i Prakticheskoe Primenenie Kremneorganicheskikh Soedinenii, Trudy Konferentsii] Chemistry and Practical Applications of Organosilicon Compounds, Proceedings of a conference held in Leningrad (pub. Leningrad, 1961) v. 6, p. 31-[37].

DESCRIPTORS: *Silanes, Ethyl radicals, Chlorine compounds, Synthesis (Chemistry), Reaction kinetics

See also 62-25277

Walther, R. von, Bielenberg, W., and Jentzsch, W.
OBTAINING OIL BY PRESSURE-RETORTING BROWN COAL, 27 Mar 31, 3p.
Order from SLA $1.10 63-10443

Trans. of Angewandte Chemie (Germany) 1930, v. 43, 15 Nov, p. 1009-[1011].

DESCRIPTORS: *Oils, Pressure, Distillation, *Coal, Manufacturing methods, Industrial research.

Vigdergauz, M. S., Gol'bert, K. A., and Gorshunov, O. L.
ANALYSIS OF LIGHT HYDROCARBONS WITH THE AID OF MOLECULAR SIEVE (Analiz Legkikh Uglovodorodov s Pomoshch'yu Molekulyarnykh Sit) tr. by L. Meyer. Jan 62 [3]p. (foreign text included) 7 refs. S.M.R.E. Trans. no. 4652; [DSIR] NLL M.3625.
Order from OTS or SLA $1.10 62-25280

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1961 [v. 6] no. 7, p. 62-63.

DESCRIPTORS: *Hydrocarbons, *Chromatographic analysis, Absorbents, *Gas analysis, Separation.

Watzl, Anton and Gerlach, Richard.
DEVICE FOR THE CONTINUOUS POLYCONDENSATION OF DIOLESTERS OF TEREPHTHALIC ACID. [1962] 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-18515

Trans. of German patent 1,128,657, V 18089 IV d/ 39c, cl. 39 c 16, internat. cl. C 08 g, appl. 20 Feb 60, pub. 26 Apr 62, by Vereinigte Glanzstoff-Fabriken AG.

DESCRIPTORS: *Phthalic acids, *Fatty acid esters, Polymerization, Condensation reactions, *Towers (Chemistry), Design.

The invention involves an apparatus for the continuous polycondensation of diolesters of terephthalic acid, consisting of a heated reaction vessel that is slightly inclined towards the horizontal and is subdivided into various chambers by dams, in which chambers stirring

paddles that are arranged on a passing-through axis are agitated, as well as of a feeding screw causing the distribution of the polyester, characterized in that there is a separating column which is connected with the vapor chamber of the reaction vessel and by which the reaction vessel is connected with a vacuum pump. The separating column is loaded with glazed saddle rings. (Author)

Wishetrawsky, S.
THE FORMATION AND DESTRUCTION OF PETROLEUM EMULSIONS. [1962] 49p. (figs. omitted).
Order from OTS or SLA $4.60 63-10704

Trans. of Azer[baidzhanskoe] Neft[yanoe] Khoz[yaistvo] (USSR) 1929 [v. 9] no. 8/9, p. 83ff.

DESCRIPTORS: *Petroleum, *Colloids, Production, Petroleum industry, Chemical engineering, Water, Experimental data, Separation.

Civil Engineering

Aas-Jakobsen.
BUCKLING: REPORT OF COMITÉ EUROPÉEN DU BÉTON, COMMITTEE NO. 8 (MEETING NO. 5) VIENNA, APR 59. [1960] [28]p.
Order from SLA $2.60 60-14282

Trans. of Comité Européen du Béton [Paris]. Bulletin d'Information (France) 1959, no. 17.

DESCRIPTORS: Buckling, *Failure (Mechanics), *Deformation, Rupture, Load distribution, Analysis, Tests, Numerical methods and procedures, Beams (Structural).

Contents:
Committee no. 8, "buckling"
Proposed method of buckling analysis
Interpretation of 356 tests of eccentric compression and of 143 tests of buckling.

Baczek, Maria and Cunge, Jan.
NOTES ON THE TEMPORARY WATER LEVEL METHOD OF UNSTEADY FLOW COMPUTATION IN RIVER CHANNELS (Uwagi na Temat Obliczen Ruchu Nieustalonego w Korytach Rzecznych Metoda Stanow Chwilowych) tr. by J. Bachrach. 1963 [15]p. 4 refs. PL-480 Int.
Order from OTS $0.50 61-31328

Trans. of Gospodarka Wodna (Poland) 1958, v. 18, no. 5, p. 194-198.

DESCRIPTORS: *Hydrology, *Rivers, *Dams, *Fluid flow, Oscillations, Equations, Graphic analysis

The basic equations of unsteady flow are given and results obtained in practical calculations are discussed.

Soretz, Stefan.
DEFORMATIONS: REPORT OF [COMITÉ EUROPÉEN DU BÉTON] COMMITTEE NO. 4 (MEETING NO. 5) VIENNA, APR 59. [1960] [28]p. 13 refs.
Order from SLA $2.60 60-14283

Trans. of [Comité Européen du Béton, Paris. Bulletin d'Information (France) 1959, no. 16].

DESCRIPTORS: Civil engineering, *Reinforced concrete Structures, *Deformation, Deflection, Moments, Inertia, Stability, *Mechanical properties, Analysis, Numerical methods and procedures.

Contents:
Introduction
Summary of currently valid specifications on the computation of deflections and on allowable deflections
Factors affecting deformation of reinforced concrete structures
New methods of analyzing deflections
Recommendations of the Committee for computation of deflections better adapted to actual conditions
Allowable or admissible deflections.

Electrical and Electronic Engineering

THE SILICONES AND THEIR USE IN THE ELECTRICAL INDUSTRY. 7 Sep 48, 14p. (figs. tables formulae omitted).
Order from SLA $1.60 62-20288

Trans. of Electricité (France) 1946, v. 30, no. 120, p. 199-205.

DESCRIPTORS: *Silicones, *Silicone resins, Polymers Plastics, Grignard reactions, *Elastomers, Electrical industry, *Electric insulation, Production.

TELEVISION RECEIVE CIRCUIT ARRANGEMENT, tr. by F. H. B. 19Feb 63, 11p. (figs. omitted).
Order from OTS or SLA $1.60 63-15776

Trans. of Belgian patent 548, 485 (in Flemish), by N. V. Philips' Gloeilampenfabricken, appl. 8 June 56, granted 30 June 56, pub. 20 Nov 59 (priority claimed based on appl. of 10 June 55 in the Netherlands).

DESCRIPTORS: *Television receivers, *Circuits, *Cathode ray tubes, Control, Electric currents, Anodes (Electron tube), Amplifiers.

USSR INDUSTRIAL DEVELOPMENT: SOVIET ELECTRICAL EQUIPMENT NO. 43. 9 Apr 63 [43]p. JPRS: 18616.
Order from OTS $1.25 63-21543

Trans. of Agitator (USSR) 1963, no. 1, p. 11; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 1, p. 22-26 (excerpts), 46-49 (excerpts); and from Pravda, Moscow (USSR) 1962, 24 Dec, p. 1; Izvestiya (USSR) 1962, 8 Dec, p. 3; 9 Dec, p. 6; 28 Dec, p. 6; Ekonomicheskaya Gazeta (USSR) 1962, no. 49[70] 1 Dec, p. 41; no. 50(71) 8 Dec, p. 29 and 47.

DESCRIPTORS: *Industrial production, *Electrical equipment, *Generators, Industrial plants, *Electric welding, Power plants (Establishments), *Electric motors, Hoists, *Cutting tools, Electric arcs, *Circuit breakers, Rolling mills, *Electric wire, *Transformers, Well drilling, *Drilling machines, Commerce

Contents:
New generator units built by the Uralelektroapparat plant
Productivity of the Sverdlovsk Uralkabal' plant
New electric welding equipment built by the Elektrik plant in 1962, by L. M. Ivanova
Technical conservatism at the Kremenchugskaya ges, by A. Dolenko
Alternating current electric motors for cranes of metallurgical enterprises, by V. A. Belyi
Artificial sun: gas-electric method of metal cutting
A guard of electric rivers Rovno high-voltage apparatus plant, by K. Zakalyuk
Unnecessary mill for rolled copper and aluminum wire at the Kamkabel' plant (Urals) by G. Syromyatnikov
Transformer production at the Moscow electrical plant imeni V. V. Kuibyshev
Why there are no Khar'kov electrical drills: Some aspect of production at the Khar'kov electrical machinery plant, by N. Gubenkov
Sales advertisement of various automatic machines
For sale (new, in original factory containers)
Sales advertisement of high-frequency apparatus
Sale advertisement of concrete reactors.

Cabre, Michel.
SOUND TRANSFER ARRANGEMENT, tr. by J. B. 9 Jan 63, 4p. (figs. omitted).
Order from OTS or SLA $1.10 63-15441

Trans. of French patent 1,027,404, gr. 12, cl. 2, appl. 7 Oct 50, granted 18 Feb 53, pub. 12 May 53. Another trans. is available from AC $2.25 [1961] 3p.

DESCRIPTORS: *Motion picture films, Installation, Motion picture sound, *Sound reproduction systems, Magnetic recording systems.

For abstract see Technical Translations 7: 25, 1962.

Djakov, E. and Raev, A.
ELECTRON OSCILLATIONS OF A RATHER HIGH ORDER IN SPLIT ANODE MAGNETRONS. [1962] 2p.
Order from SLA $1.10 62-18445

Abstract trans. of ETZ [Elektrotechnische Zeitschrift. Ausgabe A. Zentralblatt für Elektrotechnik] (Germany) 1944, v. 65, no. 13/14, p. 127-128 (originally pub. in Hochfrequenztechnik [und Elektroakustik] (Germany) 1943, v. 61, p. 140ff).

DESCRIPTORS: *Magnetrons, *Electrons, *Oscillation, Electromagnetism.

Dolnitskii, B. N. and Rudnev, O. L.
ON THE CLASS OF ACCURACY OF DOMESTIC SINGLE-PHASE ELECTRIC METERS. [1962] [7]p. 3 refs. C. E. Trans. 2607; [DSIR] NLL M. 8977.
Order from OTS or SLA $1.10 63-15184

Trans. of Elektrichestvo (USSR) 1961, no. 11, p. 70-73

DESCRIPTORS: *Power meters, Reliability, Errors, Economics, *Phase meters.

Fuhrmann, Harald.
SPARK QUENCHING FOR MAGNETIC CONTACTS AND CALCULATION OF SPARK QUENCHING ELEMENTS. [1962] 22p. 4 refs.
Order from SLA $2.60 62-18707

Trans. of [NTZ] Nachrichtentechnische Zeitschrift (West Germany) 1961, v. 14, no. 10, p. 481-486.

DESCRIPTORS: *Relays, *Magnetic core switches, Sparks, Quenching (Inhibition), Circuits.

Hahn, Wolfgang.
THEORY AND APPLICATION OF LYAPUNOV'S DIRECT METHOD, tr. by Hans H. Hosenthien and Siegfried H. Lehnigk. 1963, 182p.
Order from Prentice-Hall, Inc., Englewood Cliffs, N. J. $9.00

Trans. of unidentified German language mono., n. p., n. d.

DESCRIPTORS: *Applied mathematics, *Stability, Control systems, Cybernetics

Heydweiller, Adolph.
THE DETERMINATION OF INDUCTANCE COEFFICIENTS BY THE TELEPHONE. 20 June 46, 5p. (figs. formulae refs. omitted).
Order from SLA $1.10 62-18358

Trans. of Ann[alen] der Physik (Germany) 1894 [n. s.] v. 53, p. 499-504.

DESCRIPTORS: *Telephone equipment, *Coils, *Inductance, Resistance (Electrical), Determination, Electric bridges.

Holm, R.
ELECTRIC CONTACTS IN MEASURING DEVICES. [1962] 6p. (tables figs. omitted) 4 refs.
Order from SLA $1.10 62-20270

Trans. of A[rchiv für] T[echnisches] M[essen und Industrielle Messtechnik] (West Germany) n. d., v. 150, p. T95-T96.

DESCRIPTORS: *Electrical conductance, Instrumentation, Gold, Platinum, Silver, Copper, Zinc, Friction, Films, Resistance (Electrical), Adhesion, Pressure, *Sliding contacts, *Measuring devices (Electrical and electronic).

Istratov, V. N., ed.
SOME METHODS FOR RATIONALIZING AIRCRAFT ELECTRIC SYSTEMS (Nekotorye Puti Ratsionalizatsii Elektricheskikh Setei Samoleta). Nov 59 [125]p. 10 refs. F-TS-9488.
Order from OTS or SLA $10.10 60-19093

Trans. of Aviatsionnyi Institut, Moscow. Trudy (USSR) 1957 [v. 87].

DESCRIPTORS: *Aircraft, *Electrical equipment, Heating, Cooling, High altitude, *Conductors, *Weight, *Reduction, *Electric wire, *Aluminum wire, Circuits, Electrical networks, Electric machinery.

Contents:
Preface
Investigation of the heating and cooling of aircraft conductors under high-altitude conditions, by N. A. Shurinov
Investigation of the heating of tubular buses under high-altitude conditions, by N. A. Shurinov
The use of aluminum in the electric equipment of aircraft, by K. E. Polishchuk.

Kirschner.
PRESENT AND FUTURE INTERNATIONAL TELECOMMUNICATIONS. [1962] 38p.
Order from SLA $3.60 62-18863

Trans. of Revue Technique Luxembourgeoise, 1961, v. 53, no. 4, p. 238-248.

DESCRIPTORS: *Telephone communication systems, Television communication systems, Communication equipment, *Communication satellites (Active), *Underwater communication systems, Radiotelephones.

Laget, Carlo.
DISTORTIONLESS ELECTRICAL TRANSMISSION OVER NONUNIFORM LINES. [1962] [27]p.
Order from SLA $2.60 62-20415

Trans. of Alta Frequenza (Italy) 1933, v. 2, no. 4, p. 500-515.

DESCRIPTORS: *Transmission lines, Electric cables, Wave transmission, Transformations (Mathematical), Theory, Distortion.

Leblanc, M.
FLUORESCENT TUBE LIGHTING. [1962] 6p. (figs. omitted).
Order from SLA $1.10 62-20291

Trans. of Nature, Paris (France) 1954 [v. 73] no. 3081, p. 37-40.

DESCRIPTORS: *Lighting equipment, *Fluorescence, Filaments, Optical filters, Colors, Electron tubes, Incandescent lamps, Ions, Metals, Salts.

Linckh, H. E. and Krapf, K.
A NEW APPARATUS FOR THE TESTING OF THE WELDING TENDENCY OF CONTACTS. 13 May 47, 8p. (figs. tables formulae refs. omitted).
Order from SLA $1.10 62-20292

Trans. of ETZ [Electrotechnische Zeitschrift. Ausgabe A. Zentralblatt für Elektrotechnik] (Germany) 1942, v. 63, no. 35/36, p. 405-409.

DESCRIPTORS: *Test equipment, Tests, *Welds, *Electric switches, Copper alloys, Silver alloys, Carbon, Iron alloys, *Sliding contacts.

A series of contact materials is investigated with respect to their welding tendency in switching operations under given operating conditions and with various current loads. For the direct testing of the weld-strength use is made of a specially designed chain-scale which automatically performs a series of welds under the control of thyratron tubes, and at the same time, provides for the seating of the opposite contact, the mechanical loading of the welding spot after the weld has been completed, and the summation of the strength values of the experimental series. (Author)

Mel'nikov, G. P., Artemenkov, L. I., and Golubev, Yu. M.
A MULTI-CHANNEL AMPLITUDE ANALYZER WITH STORAGE-TUBE RECORDING (Mnogokanal'nyi Amplitudnyi Analizator s Registratsiei na Potentsialoskope). [1962] [46]p. (foreign text included) 9 refs.
Order from OTS or SLA $4.60 62-18530

Trans. of Pribory i Tekhnika Eksperimenta (USSR) 1957, no. 6, p. 57-67.

DESCRIPTORS: *Pulse analyzers, Recording systems, Memory devices, *Cathode ray tubes, *Storage tubes, Design.

A description is given of a multi-channel amplitude analyzer with a new method of recording the results of analysis on a charge-storage cathode ray tube. (Abbreviation:- "elektronno-lùchevoi analizator" - ELA). The first model, ELA-1, has 64 channels; the second model, in being at the present moment, ELA-2, differs little in essentials from the first, but can be changed over from 64 to 128 or 256 channels, containing respectively 2^{64}, 2^{32} and 216 pulses per channel. The dead time of the recording side is 20-30 microseconds. In the recording side proper, use is made of the known principle of amplitude-time transformation, with a dead time of 1·5 microseconds per channel. The amplitude spectrum is displayed on the screen of an oscillograph, and the total number of valves is 170. (Author)

Polovko, A. M.
RELIABILITY COMPUTATION OF COMPLEX AUTOMATED SYSTEMS. Apr 63 [4]p. 2 refs.
Available from AIAA in Its Journal, v. 1, no. 4, $5.00

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1960, no. 5, p. 174-178.
An unedited rough draft trans. is available from OTS or SLA $1.60 as 62-13561, FTD-TT-61-146, 3 Nov 61 [11]p.

DESCRIPTORS: *Electronic systems, Automatic, Tests, Failure, Resistors, Capacitors, Potentiometers, Diodes, Electric motors, Rectifiers, Motor generators, Gyroscopes, Relays, Delay lines, Oscillators, Vacuum tube rectifiers, *Reliability (Electronics)

Ramm, G. S.
DESIGNING TRANSISTOR AMPLIFIERS WITH FEEDBACK. [1962] 11p. 2 refs.
Order from OTS or SLA $1.60 63-10853

Trans. of Elektrosvyaz' (USSR) 1961 [v. 15] no. 7, p. 30-36.

DESCRIPTORS: *Feedback amplifiers, *Transistors, Design, Amplifiers.

Rau, K. L.
ELECTRIC PROCESSES IN THE GLASS-SEALED REED RELAY CONTACTS UPON SWITCHING OF INDUCTIVE LOAD CIRCUITS. [1962] 26p. 12 refs.
Order from SLA $2.60 63-10160

Trans. of NTZ [Nachrichtentechnische Zeitschrift] (West Germany) 1961, v. 14, no. 5, p. 242-248.

DESCRIPTORS: *Electric relays, Glass seals, Life expectancy, Glow discharges, Erosion, *Switching circuits, Sliding contacts, Inductance, Magnetic fields, *Electric switches.

Simon, G.
RESISTANCE FURNACE AND ITS APPLICATION. [1962] 7p. (figs. omitted).
Order from SLA $1.10 62-20475

Trans. of [Deutsche] Elektrotechnik (Germany) 1950, v. 4, no. 4, p. 104-108.

DESCRIPTORS: *Electric furnaces, Resistance (Electrical), Design, Induction heating, Industrial equipment.

Sjobbema, D. J. W.
USING TRANSISTORS, 2D ED. Philips' Gloeilampenfabrieken, N.V., Eindhoven, Technical Library Popular Series. 1963, 128p.
Order from W. S. Heinman, 400 E. 72nd. St., New York 21, N. Y. $4.00

Trans. of unidentified Dutch mono., n.p., n.d.

DESCRIPTORS: *Transistors, Circuits.

Syromyatnikov, I. A.
DETERMINATION OF GENERATOR LOSSES BY THE METHOD OF BRAKING. [1962] [6]p. C. E. Trans. 2215; [DSIR] NLL M. 8901.
Order from OTS or SLA $1.10 63-15190

Trans. of Elektrichestvo (USSR) 1938, no. 4, p. 67-68.

DESCRIPTORS: *Generators, Power, Tests, Acceleration, Deceleration, Dynamics.

Tolstov, Yu. G., Karashov, G. K., and Pyrov, V. V.
MODEL OF A D. C. ELECTRIC TRANSMISSION SYSTEM. [1962] [8]p. (fig. omitted).
Order from OTS or SLA $1.10 62-32772

Trans. of Fiziko-Tekhnicheskii Institut, Moscow. Trudy (USSR) 1959, v. 4, p. 49-61.

DESCRIPTORS: Models (Simulations), *Direct current, *Power transformers, Transmission lines.

Trachmann, Harald.
BATTERY PANEL IN WHICH A TEMPLATE IS DISPLACEABLY ARRANGED AS A SELECTOR ABOVE THE SWITCH OPENINGS. [1962] 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-18453

Trans. of German patent 615,087, 27 June 35, cl. 21c, gr. 27o1, A 67401 VIII b/21c, granted 29 May 35, pat. from 13 Oct 32, by General Electric Co.

DESCRIPTORS: *Panel boards (Electricity), Design, *Batteries and components, *Electric switches, Templates.

The present invention deals with a device which indicates in a clear manner to an attendant the necessary switching connections for all voltages to be adjusted and the grounding condition of parallel-connected batteries, and practically eliminates faulty connections.

The invention consists in the fact that the switch openings for making connections of parallel-connected battery poles, and the switch openings on the panel for the grounding of battery poles are arranged in two parallel series and a template displaceably arranged above the switch openings of the switch panel is subdivided into two sections (switch selector and ground selector) one of them containing the combination of openings for the release of the switching openings for the connection of battery poles and the other the corresponding combination of openings for the grounding terminals. (Author)

Veith, H.
DEPENDENCE OF THE LIFE PERFORMANCE OF ELECTRIC CAPACITORS ON TEMPERATURE AND VOLTAGE. [1962] 4p. (figs. formulae refs. omitted).
Order from SLA $1.10 63-10025

Trans. of Frequenz (Germany) 1958, v. 12, no. 11, p. 353-355.

DESCRIPTORS: *Capacitors, Life expectancy, Temperature, Electric potential, Mathematical prediction.

Wüstner, H.
SYSTEM FOR THE DIVISION AND MULTIPLICATION OF FREQUENCIES AND FREQUENCY BANDS. [1962] [7]p. (foreign text included).
Order from SLA $1.10 63-10034

Trans. of [Elektronische Rundschau] (Germany) 1951 [v. 5, no. 7] p. 374-376.

DESCRIPTORS: *Frequency dividers, *Frequency multipliers, Rectifiers, Oscillator circuits, Electron tubes, Frequency.

A system is described with which it is possible to divide or multiply frequencies and whole frequency bands, even with several frequencies present simultaneously in this band, without having disturbing distortion (overtones or combinations of tones). In this system the magnitude of the voltage of the divided or multiplied frequencies within a dynamic range, which suffices for transmission of the usual volume of communication, is proportional to the magnitude of the input voltage. (Author)

Zwick, Walter.
PROCESS FOR MAKING CONNECTIONS ON SWITCH PANELS. [1962] 2p.
Order from OTS or SLA $1.10 63-10032

Trans. of German patent 453,473, cl. 21c, gr. 27 Z 16520 VIII/21c[1], announcement of grant 24 Nov 27, issued 8 Dec 27, pat. from 32 Dec 26.

DESCRIPTORS: *Panel boards (Electricity), Design, *Electric connectors.

Mechanical Engineering

USSR INDUSTRIAL DEVELOPMENT: SOVIET REFRIGERATION MACHINERY NO. 12. 9 Apr 63 [9]p. JPRS: 18609.
Order from OTS $0.50 63-21538

Trans. from Ekonomicheskaya Gazeta (USSR) 1963, [no. 2(75)] 5 Jan, p. 25; and Rabochaya Gazeta (USSR) 1963, 26 Feb, p. 2.

DESCRIPTORS: *Industrial production, *Refrigeration systems, *Washing machines, *Air conditioning equipment, Industrial plants.

Contents:
Nistru brand washing machines and refrigerators
For clean air in the apartment
Consider the nature of the enterprise, by G. Dobrovol'skii.

Shvets, I. T., Dyban, E. P., and Klimenko, V. N.
HYDRAULIC DESIGN OF AIR COOLING SYSTEMS FOR MULTI-STAGE GAS TURBINES BY USING ELECTRIC MODELS (Gidravlicheskii Raschet Sistem Vozdushnogo Okhlazhdeniya Mnogostupenchatykh Gazovykh Turbin pri Pomoshchi Elektricheskikh Modelei). Apr 63 [14]p. 10 refs. NASA Technical Trans. F-78.
Order from OTS $0.50 63-11598

Trans. of Teploenergetika (USSR) 1960 [v. 7] no. 9, p. 14-17.

DESCRIPTORS: *Cooling and ventilating equipment, Air cooled, *Gas turbines, *Models (Simulations), Design, *Air conditioning equipment, Hydraulic systems, Electrical equipment, Model tests.

By use of the described model, the time required to compute the design of a cooling system of a two-stage gas turbine rotor was reduced 10- to 12-fold, and the labor involved in determining the rates of flow of air through the elements of the cooling system of a four-stage rotor was reduced to about 1/20 to 1/25. (NASA Abstract)

Vergne, Andre-Pierre.
APPARATUS FOR THE MEASUREMENT OF BRAKING. [1962] 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-10033

Trans. of French patent 621,277, appl. 11 Sep 26, granted 31 Jan 27, pub. 9 May 27.

DESCRIPTORS: *Deceleration, *Meters, Design, Construction.

The invention relates to an apparatus for measuring braking, this apparatus being especially remarkable in that it has a handle to which are attached two arms connected at their other end by a shaft about which a movable member pivots between the arms and in which the member to be studied engages, said member carrying at the other end a rack bar in gear with a pinion mounted on a shaft integral with a needle moving on a dial, two springs located on both sides of the member forming an elastic connection between the handle which receives the force exerted by the operator and the member moving between the arms which is subject to the reaction of the member studied. (Author)

Ordnance, Missiles, and Satellite Vehicles

Adushkin, V. V. and Sukhotin, A. P.
DISRUPTION OF A SOLID MEDIUM BY AN EXPLOSION. [1962] [9]p. 1 ref. [DSIR] NLL M 8917.
Order from OTS of SLA $1.10 63-15169

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1961, no. 4, p. 94-101.
An unedited rough draft trans. is available from OTS or SLA $3.60 in 62-23663, FTD-TT-62-74, 7 Mar 62 [39]p.

DESCRIPTORS: *Seismic waves, Propagation, *Underground explosions, Wave transmission, Solids, *Demolition.

For abstract see Technical Translations 8: 800, 1962.

Bodner, V. A. and Saleznev, V. P.
AUTOMATIC CONTROL OF THE MOVEMENT OF A BODY IN INERTIAL SPACE. [1962] 21p. 9 refs.
Order from OTS or SLA $2.60 63-10842

Trans. of Akademiya Nauk SSSR, Otdelenie Tekhnicheskikh Nauk, Izvestiya: Energetika i Avtomatika, 1961, no. 4, p. 197-207.
Another trans. is available from OTS or SLA $2.60 as 62-13569, FTD-TT-61-155, 3 Nov 61 [23]p.

DESCRIPTORS: *Inertial navigation, Automatic, *Control systems, *Space navigation, Equations of motion, Gravity, Drag.

For abstract see Technical Translations 8: 1011, 1962.

Gavril'chenko, L. I.
STATISTICAL METHOD FOR DETERMINING GUARANTEED FIRING CURRENT AND PROCEDURE FOR TESTING ELECTRIC DETONATORS FOR POSITIVE FIRING (Statisticheskaya Metod Opredeleniya Garantiinogo Toka i Metodika Ispytaniya Elektrodetonatorov na Bezotkaznost' Vzryvaniya). Sep 62 [11]p. 5 refs. RTS-2099.
Order from OTS or SLA $1.60 63-15244

Trans. of N[auchno]-I[ssledovatel'skii] I[nstitut po Bezopasnosti Rabot v Gornoi Promyshlennosti]. Trudy (USSR) 1961, v. 12, p. 12-18.

DESCRIPTORS: *Electric detonators, *Firing circuits, Electric current, Explosions, Probability, Electric igniters. *Statistical analysis.

[Hackemann].
A PROCESS FOR MEASURING RAPIDLY VARIABLE SURFACE TEMPERATURES AND ITS APPLICATION FOR GUN BARRELS (Ein Verfahren zur Messung Schnellveränderlicher Oberflächentemperaturen und Seine Anwendung in Schusswaffenläufen). [1962] [33]p. 5 refs.
Order from OTS or SLA $3.60 62-18145

Trans. of mono. (report) of Luftfahrtforschungsanstalt Hermann Göring Institut für Kinematik, Brunswick, 6 Feb 41, 39p.

DESCRIPTORS: *Gun barrels, *Thermal stresses, *Surface temperature, Measurement, Thermocouples, Amplifiers, Oscillographs, Automatic weapons.

Spak, Fred, A.
THE ORIGIN AND DEVELOPMENT OF ARTILLERY IN EUROPE, PT. 1. [1962] [19]p. 27 refs.
AERDL T-1638, pt. 1.
Order from OTS or SLA $1.60 63-13407

Trans. of unidentified mono., Stockholm, n.d.

DESCRIPTORS: *Artillery, *Europe, *History, Design.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Cremer, Hans D.
EFFECT OF HEAT ON THE NUTRITIONAL VALUE OF PROTEIN. Paper presented at Symposium on Nutritive Aspects of Preserved Foods, Oct 54. 23 Aug 62 [23]p. 15 refs.
Order from SLA $2.60 62-18872

Trans. of S[venska] I[nstitutet for] K[onserverings-forskning]. Publikation, 1956, no. 115, p. 79-94.

DESCRIPTORS: Heat, Nutrition, *Proteins, Food, Preservation, Processing.

Herbst, Walter.
PROCESS FOR PRODUCING FEED OR ADDITIVES TO DIETETIC FOOD. 5 Sep 62. 9p.
Order from OTS or SLA $1.10 63-10813

Trans. of German patent 677,977, pat. from 24 July 35, pub. 8 June 39.

DESCRIPTORS: *Food, Diet, *Additives, *Cellulose, Hydrochloric acid, Carbohydrates.

Vorob'ev, A. I.
PRODUCTION OF EDIBLE SOLUBLE CASEIN (Proizvodstvo Pishchevogo Rastvorimogo Kazeina). Sep 62 [8]p. 4 refs. RTS-2080.
Order from OTS or SLA $1.10 63-13248

Trans. of Tekhnologicheskii Institut Kholodil'noi Promyshlennosti. Trudy (USSR) 1959, v. 13, p. 41-45.

DESCRIPTORS: Production, *Casein, Solubility, Food, Processing, Manufacturing methods.

Packaging

Herrmann, Frank.
USE OF POLYPROPYLENE FOR CONTAINERS IN THE PACKING OF STICKY MATERIALS (Verwendung von Polypropylen für Behälter zum Verpacken von Klebrigen Materialien). [1962] 2p. (foreign text included).
Order from OTS or SLA $1.10 63-10258

Trans. of German patent (Auslegeschrift) 1,075,495, by Kunstoffwerk Lahr G.m.b.H., appl. 4 Sep 58, pub. and issue of the Auslegeschrift 11 Feb 60.

DESCRIPTORS: *Propenes, *Containers, Adhesion, Materials.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

Bautin, I. G. and Kushnirov, V. F.
DESIGN CHARACTERISTICS OF A HAMMER MILL AND THE METHOD OF ITS OPERATION DURING GRINDING OF HARD COALS, tr. by S. Dobrianskyj. [1962] [6]p. Trans. no. CRL/T. 843; [DSIR NLL] M. 3666.
Order from OTS or SLA $1.10 62-25269

Trans. of Koks i Khimiya (USSR) 1958, no. 8, p. 12-14.

DESCRIPTORS: *Ball mills, Design, *Coal, Grinding wheels.

For grinding hard coals, the speed of the rotor should be 980 to 1000 r.p.m. Plate-like hammers weighing 9.6 kg should be used in hammer mills. Discharge aperture should be located below the axis of the rotor. Investigation of the operation of hammer mill with arched grates must be continued, and, in doing so, the total area of the aperture should be doubled and the spacing between grates increased to 4 mm. (Author)

Duzhenkov, F. P.
CERTAIN PROBLEMS CONCERNING THE EFFECT OF THERMAL DEFORMATIONS OF MACHINE UNITS OF PRECISION GRINDING ON THE MACHINING ACCURACY. 29 Oct 62 [15]p. 2 refs. FTD-TT-62-1285; AD-292 215.
Order from OTS $0.50 63-11581

Unedited rough draft trans. of Aviatsionnyi Tekhnologicheskii Institut [Moscow]. Trudy (USSR) 1961, v. 52, p. 61-72.

DESCRIPTORS: Material removal, *Machining, *Machine tools, *Grinders, Heating, Thermal expansion, Deformation.

During the operation of a machine as result of friction of working parts of spindel head and feeding mechanism there is the liberation of heat. The heat liberated during the cutting of metal, also causes heating of the (Machinery, Fabrications and Accessory Equipment, machine. Discussed are temperature deformations connected with the operation of spindle head and feeding mechanism, as well as the total effect of these deformations on machining accuracy.

Fritsch, Charles.
AUTOMATIC MACHINE FOR CAPPING THE ENDS OF RACKET HANDLES. [1962] 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-18546

Trans. of French patent 683, 202, appl. 12 Oct 29, delivered 25 Feb 30, pub. 10 June 30.

DESCRIPTORS: *Machines, Automatic, *Rings, *Machine tools.

Lich, Otto.
GRINDING EQUIPMENT FOR DIES AND TAPS. 28 June 50, 2p. (figs. omitted).
Order from SLA $1.10 62-20277

Trans. of Werkstattstechnik und Maschinenbau (Germany) 1949 [v. 39, no. 7] p. 215-216.

DESCRIPTORS: *Grinders, Maintenance, *Dies, *Taps.

Polovko, A. M. and Chukreev, P. A.
ACCELERATED TESTING OF RELIABILITY OF THE ELECTRICAL COMPONENTS OF MECHANICAL SYSTEMS. [1962] 12p. 4 refs.
Order from OTS or SLA $1.60 63-10774

Trans. of Akad[emiya] Nauk SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Energetika i Avtomatika, 1959, no. 2, p. 99-103.
Another trans. is available from OTS $2.25 in 59-13981, JPRS(NY)-L-1117, 2 Dec 59, 78p.

DESCRIPTORS: *Reliability (Electronics), Mathematical prediction, Capacitors, Electron tubes, Resistors, Inductance, Coils, *Machines.

Röser, Anto, and Gerstlauer, Helmut.
DEVICE FOR CUTTING AND STRIPPING JUMPER WIRE, tr. by J. R.-P. 2 Jan 63, 15p. (figs. omitted).
Order from OTS or SLA $1.60 63-15450

Trans. of German Auslegeschrift (DAS) 1,084,799, cl. 21c 7/04, internat'l cl. H01b, by Röwac, Anton Röser, Elektrotechnische Fabrik, appl. 15 Jan 59, announcement of appl. and laying open to public inspection 7 July 60.

DESCRIPTORS: *Wire, Electric shunts, *Electric wire, *Cutting tools, Machines.

Yarovitsyn, V. I.
EXPERIENCE WITH THE REPAIR OF PEAT EQUIPMENT (Opyt Remonta Torfyanogo Oborudovaniya) Oct 62 [6]p. RTS 2178.
Order from OTS or SLA $1.10 63-15280

Trans. of Torfyanaya Promyshlennost' (USSR) 1962 [v. 39] no. 2, p. 9-11.

DESCRIPTORS: Peat, Machines, *Maintenance equipment, *Small tools.

The paper presents recommendations on the reconditioning of components of machines used in the peat industry by a method of vibrating arc welding, chromium plating and by replacing some components made of non-ferrous metal by caprone ones. (Author)

Engines and Propulsion Systems

Hartner-Seberich, R.
GAS PRODUCERS FOR VEHICLES AND THEIR FUELS: THE STATE OF THEIR DEVELOPMENT WITH ESPECIAL REGARD TO THE USE OF FOSSIL FUELS. [1962] 10p. (figs. refs. omitted).
Order from SLA $1.10 63-10463

Trans. of Brennstoff-Chem[ie] (Germany) 1936, v. 17, p. 1-11.

DESCRIPTORS: *Fuels, *Gas generator engines, Gases, Vehicles, Production, *Gas-generating systems.

Kirillov, I. I., Gogolev, I. G. and others.
EXPERIMENTAL BITM AIR TURBINES. 28 Jan 63 [11]p. 2 refs. FTD-TT-62-1742; AD-298 221.
Order from OTS or SLA $1.60 63-15783

Unedited rough draft trans. of Izvestiya Vysshikh [Uchebnykh] Zavedenii. Energetika (USSR) 1962 [v. 5] no. 5, p. 119-122.

DESCRIPTORS: Gas turbines, *Test equipment, Steam turbines, Azial-flow turbines, *Turbines, Model tests, Aerodynamics.

Laing, Nikolaus.
JET BLOWER FOR AIRCRAFT, tr. by J. R.-P. 5 Oct 62, 12p. (figs. omitted).
Order from OTS or SLA $1.60 63-13005

Trans. of German Auslegeschrift (DAS) 1,040,907, cl. 62b 37/01, internat'l cl. B64c, by Nikolaus Laing and Bruno Eck, appl. 7 Dec 56, announcement of appl. and laying open to public inspection 9 Oct 58.

DESCRIPTORS: *Jet propulsion, *Blowers, Jet engines, Aircraft, Vehicles, Design, Propulsion.

Lichtenberger, F. and Seeber, F.
CONTRIBUTION TO THE QUESTION OF KNOCK MEASUREMENT [1962] 8p. (figs. omitted) 31 refs.
Order from SLA $1.10 63-10452

Trans. of ATZ Automobiltechnische Zeitschrift (Germany) 1938 [v. 41] no. 14, p. 372-374.

DESCRIPTORS: *Internal combustion engine noise, *Knocking, *Fuels, Combustion, Measurement.

Meyer, Hannes.
NEW SINGLE CYLINDER TWO-STROKE CYCLE DIESEL ENGINE FOR THE BULLDOG-TRACTOR (Einzylinder-Zweitakt-Dieselmotor für den Bulldog-Schlepper). [1962] [4]p.
Order from SLA $1.10 62-18796

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (West Germany) 1956, v. 98 [no. 26] p. 1562.

DESCRIPTORS: *Diesel engines, Internal combustion engines, Engine cylinders, *Tractor engines. Tractors.

Schültz, R.
MEASUREMENT OF KNOCK RESISTANCE IN OTTO ENGINES. 29 May 43, 13p. (figs. omitted).
Order from SLA $1.60 63-10461

Trans. of [ATZ] Automobiltechnische Zeitschrift (Germany) 1939, v. 42, no. 13, p. 364-370.

DESCRIPTORS: *Internal combustion engine noise, *Knocking, *Fuels, Combustion, Measurement, Errors, Antiknock.

Machine Parts and Mechanisms

Gadow, J.
LARGE SIZE OIL COOLED LIGHT METAL PISTON (Leichtmetall-Grosskolben mit Ölkühlung). [1962] [10]p. (foreign text included).
Order from SLA $1.10 62-18740

Trans. of MTZ [Motortechnische Zeitschrift] (West Germany) 1957, v. 18, no. 11, p. 363-365.

DESCRIPTORS: *Pistons, Aluminum castings, Cooling, *Coolants, *Oils, Internal combustion engines.

In a short survey is described how cooling of light metal pistons can give improved performance in internal combustion engines. From the many possible solutions a few have been selected, which are employed successfully for series equipment and the realization of which is economical. Besides several cooling methods for cast aluminium pistons also a suitable and efficient way for forged pistons is shown. A comparison of the cooling effect of the most important methods is made. (Author)

Genkin, M. D. and Misharin, Yu. A.
AN EXAMINATION OF THE HYPOTHESIS OF BLOK ON CRITICAL TEMPERATURES IN GEARING SEIZURE (Proverka Primenimosti Gipotezy Bloka i Kriticheskoi Temperature k Raschetu Zubchatykh Koles na Zaedanie) tr. by V. N. Pavloff. 1963, 14p. 6 refs. NRCC Technical trans. 1059.
Order from NRCC $1.00 NRCC C-4320

Trans. of mono. Vsesoyunaya Konferentsiya po Treniyu i Iznosu v Mashinakh [(no. 3) 1958]. Trudy, v. 2 [Moscow] 1960, p. 188-198.

DESCRIPTORS: Temperature, *Gears, Failure (Mechanics), Lubrication, Friction, Oils, Films, Surface properties, Test methods, Experimental data, Theory, Welding, Lubricants.

Genkin, M. D. and Misharin, Yu. A.
A METHOD OF STUDYING LUBRICATING PROPERTIES OF OILS IN A GEAR TEST RIG (Metod Ispytaniya Smazivayushchei Sposobnosti Masel na Shesterenchatom Stende) tr. by V. N. Pavloff. 1963, 10p. 9 refs. NRCC Technical trans. 1057.
Order from NRCC $0.50 NRCC C-4319

Trans. of mono. Vsesoyuznaya Konferentsiya po Treniyu i Iznosu v Mashinakh [(no. 3) 1958]. Trudy, v. 1 [Moscow] 1960, p. 122-127.

DESCRIPTORS: *Lubrication, *Oils, *Gears, Surface properties, Lubricant additives, Test equipment, Lubricants, Failure (Mechanics), Friction, Welding, Films.

Genkin, M. D., Kuz'min, N. F., and Misharin, Yu. A.
A STUDY OF SEIZURE OF STEEL ROLLERS (Issledovanie Zaedaniya Poverkhnostei Stal'nikh Rolikov) tr. by V. N. Pavloff. 1963, 13p. 5 refs. NRCC Technical trans. 1056.
Order from NRCC $1.00 NRCC C-4318

Trans. of mono. Vsesoyuznaya Konferentsiya po Treniyu i Iznosu v Mashinakh [(no. 3) 1958]. Trudy, v. 1, Moscow, 1960, p. 115-122.

DESCRIPTORS: *Steel, Friction, Welding, Surface properties, Failure (Mechanics), *Lubricants, *Gears.

Gsching, W.
ON THE DEVELOPMENT OF HYDRODYNAMIC CONVERTERS. [1962] [18]p. (figs. omitted) 2 refs.
Order from SLA $1.60 62-18800

Trans. of German language article (communication) from the Research Station "Brunnenmuhle" Turbogear Div., J. M. Voith Ltd., Heidenheim (Brenz) n.d.

DESCRIPTORS: *Automatic transmissions, *Fluid flow, Torque couplings, Hydraulic couplings, *Hydrodynamics, Test equipment, Tests, Design.

Misharin, Yu. A. and Sivyakova, A. V.
A LABORATORY STUDY OF ANTI-SEIZURE PROPERTIES OF CERTAIN MATERIALS USED FOR WORM GEARS (Laboratornoe Issledovanie Protivozadirnoi Stoikosti Nekotorykh Materialov, Primenyaemykh v Chervyachnykh Pseredachakh) tr. by V. N. Pavloff. 1963, 7p. 4 refs. NRCC Technical trans. 1058.
Order from NRCC $0.50 NRCC C-4324

Trans. of mono. Vsesoyuznaya Konferentsiya po Treniyu i Iznosu v Mashinakh [(no. 3) 1958]. Trudy, v. 1 [Moscow] 1960, p. 170-173.

DESCRIPTORS: Materials, Surface properties, *Worm gears, Friction, Failure (Mechanics), *Steel, *Iron alloys, Castings, *Bronze, Welding, *Lubricants, *Gears.

Manufacturing Equipment and Processes

APPLICATION OF [THE] ELECTRO-SLAG VERTICAL WELDING TO THICK STEEL PLATES UNDER WORKSHOP OR YARD CONDITIONS. Quarterly rept. 2, 1 Apr-30 June 62, on Contract 054-61-12 RDB. [1962] [47]p.
Order from OTS or SLA $4.60 EURAEC-392

Trans. of rept. from Chantiers de l'Atlantique Penhoet-Loire, Paris (France) n.d.

DESCRIPTORS: *Welding, Arc welding, Welds, *Metal plates, Steel, Thermocouples, Mechanical properties.

Before starting on the main subject (welding of very thick plate and the mechanical characteristics obtained) it seemed necessary to have a more thorough knowledge of the "as delivered" base plate characteristics, and more especially to bring out the variations in the characteristics which may occur between the skin and the heart of the steel plate. This study is the subject of the first part of this activity report. When the very thick joints were made we thought of making a temperature chart. This led us to carry out some preliminary tests which enabled us to judge the nature and importance of the different causes of errors inherent in the thermocouple measuring system. These preliminary experiments are the subject of the second part of this report. (Author)

PRACTICAL SUGGESTION TO THE FOUNDERS. 20 Nov 61, 13p. 1 ref.
Order from SLA $1.60 63-10896

Trans. of Fonderie (France) 1956, no. 123, p. 160-165.

DESCRIPTORS: *Foundries, *Casting, Plastics, Molding, *Urea-formaldehyde resins, *Phenol-formaldehyde resins, Chemical properties, Mechanical properties, Physical properties.

Delcroy, C. and Genin, G.
SOME ASPECTS OF THE PHYSICAL CHEMISTRY OF OXYGEN CUTTING, I, II AND III. [1962] [70]p. 9 refs.
Order from SLA $6.60 62-20126

Trans. of Rev[ue de la] Soud[ure-Lastijdschrift] (Belgium) 1955, v. 11, no. 4, p. 214-225; 1956, v. 12, no. 1, p. 50-70; no. 2, p. 130-138.

DESCRIPTORS: *Oxygen, *Cutting torches, Physical chemistry, Ignition, Oxidation, Theory, Experimental data, Steel, Operation, Metal plates, Torches.

In the investigation of the effect of the velocity of the oxygen stream on the apparent ignition temperature of mild steel samples, it was found that when the preheating was done without oxygen: (1) the apparent ignition temperature of the samples was higher than when they were heated in oxygen; (2) the apparent ignition temperature was practically unaffected by the velocity of the oxygen. When the samples are heated in air a more protective oxide coating is formed than in oxygen, and the thermal behavior of the samples is affected accordingly. When the preheating takes place in the absence of oxygen, the velocity of the oxygen stream has a definite effect on the apparent ignition temperature. The velocity of the oxygen stream has an effect on the apparent ignition temperature of the samples only when the latter are coated.

Hofsten, Carl-Olof von and Lindstrand, Erik.
SOME EXPERIMENTAL INVESTIGATIONS REGARDING WIRE-DRAWING. [1962] [34]p.
Order from SLA $3.60 62-14314

Trans. of [Jernkontoret, Stockholm]. [Annaler] (Sweden) [1958, v. 142, no. 3, p. 128-164].

DESCRIPTORS: *Wire, *Drawing (Machine processing), Industrial research, Power, Temperature, Coatings, Experimental data.

Kunz, H. and Peletier, L. A.
NEW COMPARATIVE CUTTING TESTS WITH PROPANE AND ACETYLENE [AND] CRITICISM OF KUNZ'S PAPER WITH REPLY TO PELETIER'S CRITICISM. [1962] 10p. 3 refs.
Order from SLA $1.10 62-20167

Trans. of Schweissen und Schneiden (West Germany) 1952, v. 4, no. 12, p. 442-444.

DESCRIPTORS: Tests, Torches, *Propanes, *Acetylenes, Consumption, Oxygen, *Cutting torches.

Lebed', D. P. and Sidoruk, V. S.
ON THE PROBLEM OF (WELD) HOT CRACKING. Mar/Apr 63, 700 words.
Order from HB $2.50 HB-5917

Trans. of #Avtomaticheskaya Svarka (USSR) 1963, v. 16, no. 2, p. 41-42.

DESCRIPTORS: *Welds, *Arc welding, Temperature, Crystallization, Crystal structure.

Lecis, U.
CONTINUOUS CASTING: MAKING ALUMINUM WIRE ROD BY THE PROPERZI PROCESS. [1962] 10p. (figs. omitted).
Order from SLA $1.10 63-10282

Trans. of Alluminio (Italy) 1956, v. 25, June, p. 275-278.

DESCRIPTORS: *Aluminum, *Wire, *Rods, Production, *Casting, Mechanical properties, Electrical properties, *Rolling mills, Machines, Design.

Lehmann-Halens, W.
MACHINE MEMBERS JOINED BY SURFACE FUSION. 31 Mar 49, 4p. (figs. omitted).
Order from SLA $1.10 62-20293

Trans. of die Technik (East Germany) 1948, v. 3, no. 3, p. 133-134.

DESCRIPTORS: *Casting, Heat of fusion, Surfaces, Brass, Steel, Metals, Machines, Construction.

Schierhorn, W.
SAVING OF FUEL GAS DURING FLAME CUTTING. [1962] [5]p.
Order from SLA $1.10 62-20096

Condensed trans. of Schweisstechnik (Germany) 1955, v. 5 [no. 6] p. 176-178.

DESCRIPTORS: *Fuels, *Gases, *Cutting torches, Economics, Oxygen, *Acetylenes, *Hydrogen, Operation.

Mantel, W.
SIGNIFICANCE OF PHYSICAL PHENOMENA IN WELDING ARC. [1962] [20]p. 6 refs.
Order from SLA $1.60 62-20099

Trans. of Schweissen u[nd] Schneiden (West Germany) 1956, v. 8, no. 3, p. 280-287.

DESCRIPTORS: *Arc welding, *Electrodes, Thermionic emission, Gas discharges, Polarization, Tungsten, Argon, Helium, Steel.

An attempt has been made to apply the known fundamental properties of the physical arc to the welding arc. In accordance with the heating of the anode, three different types of arcs are formed which in practical welding occur as three variants, depending upon polarity and type of current used. A comparison is made between the known theoretical relationships of these variations of the physical arc and the experiences gained in actual welding practice, first in the case of the nonconsumable tungsten arc and then for the gas-or flux-shielded consumable electrode. A hypothesis for the various types of the welding arc is proposed which is intended to show how the welding process can be varied by proper arc selection and where future research should be applied in order to obtain practically useful results.

Pouzeau, P., ed.
TUNGSTEN CARBIDE TIPPED TOOLS (Les Outils à Mises Rapportées en Carbure de Tungstene). [1962] [110]p.
Order from SLA $9.10 62-20191

Trans. of Centre Technique du Bois [Paris]. Cahier (France) 1959, no. 37, p. 2-36.

DESCRIPTORS: *Tungsten compounds, *Carbides, *Carbide tools, *Circular saws, *Molding, Drills, Mechanical properties, Hardness, Brittleness, Grain structures (Metallurgy), Design, Operation, Maintenance, Cutting tools.

Contents:
General remarks on the characteristics of the tools and their rational utilization
Moulding tools
The circular saw
Miscellaneous tungsten carbide tipped tools
Maintenance and grinding of tools

Siebel, E.
THE PRESENT STATUS OF RECENT ACHIEVEMENTS IN THE MECHANICAL PROCESSES OF WIRE DRAWING. 3 Mar 48, 18p. (figs. formulae refs. omitted).
Order from SLA $1.60 62-20338

Trans. of Stahl und Eisen (West Germany) 1947, v. 66/67, no. 11/12, p. 171-180.

DESCRIPTORS: *Wire, *Drawing (Machine processing), Deformation, Stresses, Friction, Heat, Lubrication.

Unckel, U.
EXPERIMENTS ON THE FLOW OF PLASTIC MATERIALS THROUGH NON-CENTERED OPENINGS. [1962] 10p. (figs. tables [refs.] omitted).
Order from SLA $1.10 63-10023

Trans. of Z[ei]ts[chrift] f[ür] Tech[nische] Physik (Germany) 1941 [v. 22] no. 5, p. 105-110.

DESCRIPTORS: *Extrusion, Test equipment, Design, Experimental data, *Creep, Deformation, *Plasticity, Fracture (Mechanics), Waxes, Aluminum.

Unckel, H.
PLASTIC EXTRUSION FROM CENTERED OPENINGS. [1962] 6p. (figs. tables [refs.] omitted).
Order from SLA $1.10 63-10022

Trans. of Z[ei]st[chrift] f[ür] Tech[nische] Physik (Germany) 1941 [v. 22] no. 10, p. 245-248.

DESCRIPTORS: *Extrusion, Test equipment, Design, Experimental data, Copper alloys, Zinc alloys, Brass, Aluminum, Waxes, *Creep, Deformation, *Plasticity, Fracture (Mechanics).

Transport, Traction and Hoist Facilities

Khudokormov, V. I.
SPECIALIZATION IN OVERHAUL OF ALL-METAL PASSENGER CARS. [1962] 6p.
Order from OTS or SLA $1.10 63-10763

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 8] p. 73-78.

DESCRIPTORS: *Railroad cars, Passenger vehicles, Metals, *Maintenance, Maintenance equipment.

Nagy, J.
ANALYSIS OF STABILITY ON STRAIGHT SECTIONS OF WELDED TRACKS. [1962] [8]p.
Order from OTS or SLA $1.10 63-10760

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 9] p. 40-44.

DESCRIPTORS: *Railroad tracks, *Welding, Stability, Analysis.

Orlov, N. G.
TECHNICAL INNOVATIONS IN PRODUCTION OF WELDED RAILS. [1962] 5p. (3 figs. omitted).
Order from OTS or SLA $1.10 63-10648

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 7] p. 45-48.

DESCRIPTORS: Production, *Railroad tracks, *Welding, Automation, Conveyors, Grinders, Cutting tools.

Shtefko, I. V. and Kozlov, Yu. T.
SPECIAL CONTAINERS FOR FREIGHT TRANSPORTATION. [1962] 4p. (2 figs. omitted).
Order from OTS or SLA $1.10 63-10638

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 7] p. 66-69.

DESCRIPTORS: *Containers, *Cargo, *Railroad cars, Transportation, Loading (Mechanics), Volume.

Zvukov, H. M.
RAILROAD TRACKS IN METALLURGICAL MILLS AND MACHINE-BUILDING WORKS IN CZECHOSLOVAKIA. [1962] 6p.
Order from OTS or SLA $1.10 63-10764

Trans. of Zheleznodorozhnyi Transport (USSR) 1962 [v. 44, no. 8] p. 88-91.

DESCRIPTORS: *Railroad tracks, Industrial plants, Foundations (Structures), Design, Welding, Wood, Metals, Concrete, Slags.

MATERIALS

CONCRETE AND PENETRATING RAYS. [1961] 8p.
Order from SLA $1.10 61-20218

Trans. from Bulletin du Ciment [sic] 1950, no. 7.

DESCRIPTORS: *Cements, *Concrete, *Radiation hazards, X-rays, Gamma rays, *Shielding

A discussion of the uses of concrete constructions as shielding from high-energy radiations.

DIMENSIONAL TOLERANCES: PERMISSIBLE DEVIATIONS FOR MEASUREMENTS WITHOUT TOLERANCES (Freimafztoleranzen: Zulässige Abweichugen für Masse ohne Toleranzangabe). [1962] 5p. (foreign text included).
Order from SLA $1.10 62-20423

Trans. of Austrian industrial standard, specification no. M 1365, 6 Oct 52.

DESCRIPTORS: Austria, Standards, Materials, Acceptability, *Tolerances (mechanics), *Quality control, Measurement, Metals, Plastics, Ceramic materials, Rubber.

MISTAKES MOST FREQUENTLY MADE DURING THE MAKING AND PLACING OF CONCRETE. [1961] 8p.
Order from SLA $1.10 61-18990

Trans. from Bulletin du Ciment [sic] 1952, v. 20, no. 6.

DESCRIPTORS: *Cements, *Concrete, Job analysis

Pointers are given concerning the following phases of concrete work: Mixing the concrete (mixing water, segregation of the aggregates, length of mixing time, proportions of cement); control before (relative density of cement and of mixed aggregates) and after cementing; placing the concrete in formwork; the construction of joints; and, the subsequent treatment of concrete.

Leins, Werner.
NEW METHOD OF REPAIRING CONCRETE PAVEMENTS WITH PRECAST SLABS. [1962] 14p. (figs. omitted).
Order from SLA $1.60 63-10208

Trans. of Beton Herstellung Verwendung (West Germany) 1960, v. 10, no. 1, p. 1-8.

DESCRIPTORS: *Pavements, *Concrete, Maintenance, Roads, Traffic, *Reinforcing materials.

Presnov, V. A.
ELECTRON THEORY OF A STABLE COMPOUND AT THE SURFACES OF METALLIC AND NON-METALLIC MATERIALS (K Voprosu ob Elektronnoi Teorii Prochnogo Soedineniya Poverkhnostei Metallicheskikh i Nemetallicheskikh Tel). [1962] [25]p. (foreign text included) 12 refs.
Order from OTS or SLA $2.60 62-18899

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1957, no. 1, p. 103-110.

DESCRIPTORS: *Metals, *Ceramic materials, *Bonding, *Cermets, Surface properties, Oxides, Electrons, Theory, *Adhesives, Stability.

Reisner, Wolfgang.
MOVEMENT PROCESSES IN LOOSE MATERIAL ON FLOWING FROM A BUNKER (Bewegungsvorgänge im Schüttgut beim Ausfliessen aus einem Bunker). [1962] [13]p. (foreign text included) 11 refs.
Order from SLA $1.60 62-18824

Trans. of Tonind[ustrie]-Z[ei]t[un]g (West Germany) 1962, v. 86, no. 6, p. 138-141.

DESCRIPTORS: Materials, *Calcite, *Storage, *Containers, Particles, Motion, Photography.

Smrcek, K. and Kandl, J.
EFFECT OF PARTICLE SIZE DISTRIBUTION OF CHARGE ON THE FORMATION AND MECHANICAL STRENGTH OF GREEN PELLETS. Mar/Apr 63, 5400 words.
Order from HB $14.80 HB-5826

Trans. of Hutnicke Listy (Czechoslovakia) 1962, v. 17, no. 11, p. 761-766.

DESCRIPTORS: *Pellets, *Material forming, Particle size, Distribution, Mixtures, *Mechanical properties.

Theden, Gerda and Schultze-Motel, Marleen.
INVESTIGATION OF SEVEN FUNGI USED FOR TESTING THE MOLD RESISTANCE OF MATERIALS. [1962] 44p. 25 refs.
Order from SLA $4.60 63-10778

Trans. of Angew[andte] Botanik (Germany) 1960, v. 34, Nov, p. 134-157.

DESCRIPTORS: *Fungi, *Fungus deterioration, Materials, Test methods, Molds (Organisms), Industrial equipment, Structures, Resistance.

Ceramics and Refractories

PROCESS FOR MAKING GLASS SURFACES WATER-REPELLENT. [1962] 2p.
Order from OTS or SLA $1.10 63-10264

Trans. of Dutch patent 80,669, by Stoop's Handelmaatschappij N.V., Apeldoorn, appl. 181,004, filed 31 Aug 53, pub. 15 Sep 55, issued 15 Feb 56, dated 17 Jan 56.

DESCRIPTORS: Glass, Surface area, *Moisture-proofing, Silicones.

Huhmann, I.
ENERGY [TRANSFER] IN GLASS MELTS: TEMPERATURE DISTRIBUTION AND ENERGY [FLOW]. PT. II. APPLICATION OF THE THEORY, COMPOSITION AND CALCULATION OF AUXILIARY FUNCTIONS AS WELL AS COMPARING CONSIDERATIONS OF THE RESULTS AND THEIR DEVIATIONS (Über den Energietransport in Glasschmelzen: Temperaturverteilung und Energiestrom. Teil II. Anwendung der Theorie, Zusammenstellung und Berechnung von Hilfsfunktionen sowie Vergleichende Betrachtungen der Resultate und ihrer Abweichungen). [1962] [92]p. (foreign text included) 10 refs.
Order from SLA $8.60 62-16151

Trans. of Huttentechnische Vereinigung der Deutschen Glasindustrie. Report (West Germany) no. 791, 57p.

DESCRIPTORS: *Glass, Melting, Temperature, Energy, Thermal radiation, Blackbody radiation, Thermal conductivity, Heat transfer, Numerical analysis.

Portnoi, K. I., Levinskii, Yu. V., and Fadeeva, V. I.
INTERACTION OF CERTAIN REFRACTORY CARBIDES AND THEIR SOLID SOLUTIONS WITH CARBON. [1962] 6p. 8 refs.
Order from OTS or SLA $1.10 63-10845

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Metallurgiya i Toplivo, 1961, no. 2, p. 147-[149].
Another trans. is available from OTS or SLA $1.10 as AEC-tr-4871 [1961] 5p.

DESCRIPTORS: *Carbides, Titanium compounds, Zirconium compounds, Tantalum compounds, Hafnium compounds, Eutectics, *Refractory materials, Chemical reactions.

For abstract see Technical Translations 8: 661, 1962

Savostin, D. Z.
OPERATION OF OPEN HEARTH FURNACES WITH CHROME-MAGNESITE ROOFS, tr. by A. Behr. 1962 [439]p. 102 refs.
Order from OTS or SLA $22.25 62-33086

Trans. of mono. Rabota Martenovskikh Pechei s Khromomagnezitovymi Svodami [Moscow] 1958.

DESCRIPTORS: *Open hearth furnaces, Operation, *Refractory materials, *Brick, *Silicon compounds, Dioxides, *Chromium compounds, *Magnesite, *Roofs, Design, Construction.

The book gives some details of the properties of silica and refractory chrome-magnesite bricks, describes different forms of construction and support of chrome-magnesite roofs and deals with thermal and other special characteristics of the operation of open-hearth furnaces with basic roofs. Figures are given for the life of the roofs, the increase in output and the reduction in the specific consumption of refractories in furnaces with chrome-magnesite roofs. The book is intended for the technical staff of open-hearth furnace shops and can also be used by advanced students of metallurgy. (Author)

Tangermann, Ingrid.
WETTABILITY IN OXIDE AND CARBIDE SYSTEMS. [1962] [14]p. 5 refs.
Order from SLA $1.10 62-18695

Trans. of Neue Hütte (East Germany) 1961, v. 6, no. 12, p. 767-771.

DESCRIPTORS: *Cermets, Binders, Sintering, *Aluminum compounds, Oxides, *Molybdenum, *Titanium compounds, Carbides, Metals, Alloys, Chromium, Manganese, Iron, Copper, Cobalt, Nickel.

Experimental investigations of the wettability of the base components of the cutting ceramic HC30 were carried out by the method of the sessile drop. The determination of the wettability characteristics of Al_2O_3, Mo_2C, and TiC-Mo_2C (1:1) against metals, metal alloys, and metal oxides in different atmospheres led to the following results: Al_2O_3 is completely wet by the metal oxides, partly by Cr, Mn, FeCr, FeMn, in all atmospheres, by Fe, Cu, Co, Ni, only under certain conditions. A Titanium addition affects the wettability of the metal favorably. Carbide is wet significantly better than Al_2O_3; it shows complete wettability by the oxides, conditional wettability by the metals. Oxide additions to Al_2O_3 exert a good influence on its sintering behavior. (Author)

Toropov, N. A.
NEW DATA RELATING TO THE SYSTEM Al_2O_3-SiO_2 AND TO THE REFRACTORIES FOR GLASS MELTING FURNACES (Nouvelles Donnees sur le Diagramme d'Etat du Système Al_2O_3-SiO_2 et Emploi des Réfractaires Alumineux dans les Fours de Verrerie). [1962] [16]p. (foreign text included) 14 refs.
Order from SLA $1.60 62-18209

Trans. of reprint of paper presented at Congrès International du Verre (International Glass Congress) (no. 4) [Paris, 1956]. Paper no. I-1, p. 1-5.

DESCRIPTORS: *Glass, Lead compounds, Melting, *Furnaces, Refractory materials, *Mullite, *Aluminum compounds, Oxides, *Silicon compounds, *Zirconium compounds, Dioxides, *Phase studies.
Refractory mullite blocks for glass melting furnaces have the highest resistence to attack by the fused glass if they contain some additions of ZrO_2. Accordingly, we studied new phase diagrams of ZrO_2. SiO_2 and ZrO_2 Al_2O_3-SiO_2, as well as the properties of the refractories for glass melting furnaces having compositions based on these diagrams. Tests were conducted to investigate the technical properties of these refractories and in particular their resistence to the attack of fused glass especially to glass melt containing lead oxide. Different recommendations are made. (Author)

Fuels, Lubricants, and Hydraulic Fluids

Bezborod'ko, M. D., Pavlovskaya, N. T., and Arkharova, V. V.
THE EFFECT OF THE COMPOSITION AND THE NATURE OF GASEOUS MEDIA ON THE ANTI-WEAR PROPERTIES OF PETROLEUM LUBRICATING OILS. 13 Nov 62 [17]p. 16 refs. FTD-TT-62-1173; AD-292 234.
Order from OTS $0.50 63-11583

Unedited rough draft trans. of mono. Vsesoyuznaya Konferentsiya po Treniyu i Iznosu v Mashinakh (All-Union Conference on Friction and Wear in Machines) (no. 3) Moscow, Apr 58. Trudy Konferentsii, v. 3, 1960, p. 177-186.

DESCRIPTORS: *Lubricants, *Oils, Petroleum, Gases, *Argon, Oxygen, Air, Metals, Friction, Microstructure, Temperature, Pressure.

In this paper a study has been made of the effect of gaseous media on the anti-wear properties of petroleum products during the wear of different metals under conditions of high specific pressures and temperatures. The nature of the gaseous media affects both the value of the wear in steels and the critical load, while the mean specific pressures are practically independent of the gaseous medium. The nature of the gaseous mediun affects not only the intensification or retardation of the oxidation of the hydrocarbon media, but also has a great effect on the change in the metal structure in the zones of friction. Moreover, it affects the friction and wear of chemically stable metals at relatively high temperatures. (Author)

Chukhanov, Z. F., Kashurichev, A. P., and Stonanov, Ya. A.
THE EFFECT OF DISPROPORTIONING THE COMPOSITION AND THE INCREASE IN THE YIELD IN VOLATILE PRODUCTS IN FUEL PYROLYSIS AT HIGH HEATING RATES (Effekt Disproportsionirovaniya Sostava i Pobysheniya Vykhoda Lietuchikh Produktov Piroliza Topliva pri Vysokikh Skorostyakh Ego Nagrevaniya). [1962] [10]p. 14 refs.
Order from OTS or SLA $1.10 63-10181

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 1, p. 162-165.

DESCRIPTORS: *Fuels, *Pyrolysis, Heat, Decomposition, *Coal, Coal gas, Coal, Tar, Vapors.

Kochling, A.
EXPERIMENTS FOR THE EXPLANATION OF THE KNOCKING PROCESS. [1962] 21p.
Order from SLA $2.60 63-10702

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (Germany) 1938, v. 82, no. 39, p. 1126-1134.

DESCRIPTORS: *Knocking, *Fuels, Combustion chambers, Combustion, Velocity, Vibration, Temperature, Chemical analysis, Tests, Test equipment, Design, Experimental data, Internal combustion engine noise, Antiknock.

Lazovskii, I. M., Tsynovnikov, A. S., and Latskaya, M. P.
EFFECT OF SIZE DISTRIBUTION OF COAL CHARGE ON COKE QUALITY, tr. by S. Dobrianskyj. [1962] [13]p. 1 ref. Trans. no. CRL/T.878; [DSIR NLL] M.3661.
Order from OTS or SLA $1.60 62-25273

Trans. of Stal' (USSR) 1955 [v. 15] no. 3, p. 199-204.

DESCRIPTORS: *Coke, Preparation, *Coal, Particles, Separation.

Increased content of the particle size below 1mm in a blend decreases its bulk density and increases fines in coal preparation plants. The content of the particle size below 1mm has a great effect on the quality of coke. A preliminary separation of the particle size below 3mm from the run-of-mine fat coal (Zh 1), decreases the yield of < 1mm with the same degree of grinding, and increases the average fineness of the crushed coal. In doing so, the strength of coal decreases. The preliminary separation of <3mm particle size from a run-of-mine coking coal (K), with a finer grinding (approximately 100% below 3mm), increases the strength of the coke, and with coarser grinding (about 95% below 3mm) the coke strength decreases. Analogous results were obtained from a blend with a preliminary separation of the 3mm particle size from run-of-mine coals included in its composition. In order to decrease the amount of fines, to increase the bulk density of a blend, to improve the quality of the coke and to decrease the consumption of electric power during grinding of coals, it is necessary to separate the <3mm particle size from run-of-mine coals, with recrushing of the particle size above 3mm to the required degree. (Author)

Loison, R. and Boyer, A. F.
THE INFLUENCE OF THE PROPERTIES OF THE CONSTITUENTS OF THE BLEND OF THE FISSURING OF COKE. [1962] [19]p.
Order from SLA $1.60 62-14592

Trans. of paper [presented] at Congres due Centenaire de la Société de l'Industrie Minerale, Paris, June 55.

DESCRIPTORS: *Coke, Contraction, Rupture, *Coal, Physical properties.

Ravich, B. M.
USE OF PEAT IN THE PRODUCTION OF ORE-PEAT AND FLUXED BRIQUETTES (Ispol'zovanie Torfa Pri Poluchenii Rudno-Torfyanykh i Oflyusovannykh Briketov). Oct 62 [7]p. 9 refs. RTS 2177.
Order from OTS or SLA $1.10 63-15279

Trans. of Torfyanaya Promyshlennost' (USSR) 1961 [v. 38] no. 3, p. 24-26.

DESCRIPTORS: *Peat, Iron, Ores, Fluxes (Fusion), *Coke, Production, Smelting, Briquettes.

The paper describes the results of laboratory work on the use of peat for the manufacture of ore-peat briquettes and thermal briquettes. Recommendations are made on their production by different methods and the need is stressed for extensive investigations into the use of peat for this purpose. (Author)

Sakhanov, A. N. and Tilicheev, N. G.
THE EFFECT OF HIGH PRESSURE AND INTENSITY OF CRACKING UPON THE YIELDS AND CHARACTERISTICS OF CRACKED GASOLINE. [1962] 22p. 8 refs.
Order from OTS or SLA $2.60 63-10418

Trans. of Neftyanoe Khozyaistvo (USSR) 1929, v. 16 [no. 2] p. 223-230.

DESCRIPTORS: *High-pressure research, *Hydrocarbons, *Gasoline, *Decomposition, Chemical properties, Physical properties.

Schultes, W.
SOLID FUELS IN GENERATOR OPERATION FOR HIGHWAY VEHICLES. [1962] 5p. (figs. tables omitted).
Order from SLA $1.10 63-10460

Trans. of Brennstoff-Chemie (Germany) 1937, v. 17 [no. 2] p. 61-67.

DESCRIPTORS: Solids, *Fuels, *Gas generator engines, Charcoal, Wood,Coke, Passenger vehicles.

Speransov, N.
A KOLKHOZ PETROLEUM STORAGE BASE (Kolkhoznoe Neftekhranilische). 5 Feb 60 [8]p. (figs. omitted). AF-1 419 443.
Order from OTS or SLA $1.10 62-25673

Trans. of Kolkhoznoe Proizvdstvo (USSR) 1959 [v. 19] no. 4, p. 37-39.

DESCRIPTORS: *Petroleum, Gasoline, *Storage tanks, Fuel tanks, Supply depots, Design, *Fire safety.

Wilke, W.
TESTING ENGINES FOR DETERMINING THE KNOCK VALUE OF FUELS: OTTO MOTOR FUELS [AND] DIESEL MOTOR FUELS. 15 Feb 39 [29]p.
Order from SLA $2.60 63-10431

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (Germany) 1938, v. 82, no. 39, p. 1135-1142.

DESCRIPTORS: *Knocking, *Internal combustion engine noise, *Fuels, Combustion, Tests, *Test equipment, Design, Fuel oil, Antiknock.

Leather and Textiles

DRAWPLATE FOR PRODUCING HOLLOW THREADS. [1961] 6p.
Order from RIS $12.00 RIS C-178

Trans. of French patent 1 256 848, by W. C. Heraeus, G. m. b. H. [1961] (Two applications filed in the German Federal Republic in the name of the applicant: patent 3 June 59 under no. H 36 543; suppl. patent 23 Dec 59 under no. H 38 221).

DESCRIPTORS: *Fibers (Synthetic), Material forming, *Threads, Production, Textiles.

POLYNOSIC FIBRE Z. 54. Oct 60 [7]p.
Order from SLA $1.10 62-20117

Trans. of Textil-Rundschau (Switzerland) 1960 [v. 15, no. 2] p. 82-85.

DESCRIPTORS: *Fibers (Synthetic), Cellulose, Textiles, Cotton, Fibers, Tensile properties.

Z. 54 is a fibre of a type referred to as "polynosic," made according to a new process on the basis of cellulose.

Baibakova, Z. V., Rozhanskaya, F. M., and Rogovin, Z. A.
THE PRODUCTION OF STAPLE FIBER FROM SOLUTIONS OF TRIACETYL CELLULOSE IN ACETIC ACID. 1 June 62, 8p. 3 refs.
Order from OTS or SLA $1.10 63-10808

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 6, p. 46-48.

DESCRIPTORS: *Fibers, Production, *Acetyl radicals, Cellulose compounds, *Acetic acids, Mechanical properties, Fibers (Synthetic).

A method for producing triacetate staple fiber from acetic acid solutions of cellulose triacetate was developed and the main process parameters were established. The relation between process parameters and the physical and mechanical properties of the fiber was examined. (Author)

Belitsin, M. N.
THE EFFECT OF THE PROPERTIES OF SINGLE VISCOSE FIBERS ON THE PROPERTIES OF TWISTED YARN (Vliyanie Svoistv Niskoznykh Zlementarnykh Volokon na Svoistva Kruchenoi Niti). 24 May 62 [26]p. 18 refs.
Order from OTS or SLA $2.60 63-10789

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 1, p. 60-67.

DESCRIPTORS: *Viscose, *Fibers, Mechanical properties, Processing, Mathematical analysis, Textiles, Fibers (Synthetic).

Cappuccio, V., Coen, A. and others.
ISOTACTIC POLYPROPYLENE FIBER. [1962] [32]p. 22 refs.
Order from SLA $3.60 62-18672

Trans. of [Ia] Chimica e l'Industria (Italy) 1962, v. 44 [no. 5] p. 463-473.
Another trans. is available from CTS(Chem) $21.20 (subsequent copies $3.50/ea) as CTS(Chem)-292, Aug 62, 5300 words.

DESCRIPTORS: *Synthetic fibers, Polyethylene plastics, *Propenes, Molecular isomerism, Extrusion, Crystal structure, Physical properties, X-ray diffraction analysis.

The behavior of isotactic polypropylene in the various stages of its transformation into fiber is discussed in the light of the rheological properties of the molten polymer and particular evidence is given on the crystalline texture. Some of the physical properties of the styrate fibers are examined and experimental data are reported which show the decisive influence of the crystallinity on the abrasion resistance and on the stress relaxation. (Author)

Götze, Kurt; Hilgers, Friedrich and others.
PROCESS FOR FINISHING OR SOFTENING FULLY SYNTHETIC YARNS, FILAMENTS, FILMS AND TEXTILE FLAT PRODUCTS. 25 Sep 62, 7p. 5 refs.
Order from OTS or SLA $1.10 63-10802

Trans. of German patent 1,058,968, C9014 IVc/8K, by Chemische Fabrik Stockhausen and Cie., appl. 10 Mar 54, publication of the application and the issue of the pat. June 59.

DESCRIPTORS: *Fibers (Synthetic), Filaments, Films, *Finishes and finishing, Fatty acids, Sulfonates, Urea, Textiles.

Gurvich, L. G.
TENACITY OF POLYMERIC FIBRES AS A FUNCTION OF THE SHAPE OF THE MOLECULAR WEIGHT DISTRIBUTION. 11 Apr 62, 4p. 5 refs. T.1352; [DSIR] NLL M.8846.
Order from OTS or SLA $1.10 62-32799

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 7, p. 1062-1064.
Another trans. is available from ATS $5.50 as ATS-52N56R [1961] 4p.

DESCRIPTORS: *Polymers, *Fibers, Tensile properties, Molecular weight.

Fibre tenacity is found to be a function of the shape of the polymer molecular weight. Regions are found in which a yarn tenacity theory based on a chain slippage mechanism is applicable and a theory based on a chain rupture mechanism. (Author)

Ivanov, V. M. and others.
APPARATUS FOR PRESSING ASSEMBLED "CAKES" OR PACKS OF ARTIFICIAL SILK DURING THEIR WET PROCESSING. 17 Dec 62, 4p.
Order from OTS or SLA $1.10 63-10831

Trans. of Russian patent 139,048, gr. 131, filed 12 Sep 60 under 679,034/28 (pub. in #Byulleten' Izobretenii (USSR) 1961, no. 12).

DESCRIPTORS: *Presses (Machinery), Design, Processing, *Silk, Fibers (Synthetic).

Koritskii, K. I.
THE ESTIMATION OF THE BREAKING CHARACTERISTICS OF VISCOSE TIRE CORD. 14 Dec 62 [16]p. 4 refs.
Order from OTS or SLA $1.60 63-10830

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. [Tekhnologiya] Tekstil['noi] Prom[yshlennosti] (USSR) 1962 [v. 6] no. 1, p. 42-49.

DESCRIPTORS: *Failure (Mechanics), *Viscose, *Fibers, Tires, Mathematical analysis, Mathematical prediction, Fibers (Synthetic).

When specifying the breaking characteristics of cord yarn, it is necessary to use the equation of the final section of the extension curve for complex yarn and the calculated values of the angles of inclination of the strands to the cord axis and that of the fibers to the strand axis. Formulas are given for the calculation of breaking elongation and the modulus of deformation of the cord yarn. Formulas are established for the relationship between the coefficient of utilization of the fiber strength in cord and the value of the first and second yarn twist. The comparison of the calculated and found breaking characteristics of the cord yarn shows that the suggested method of planning these characteristics can be recommended for use in the practice of cord producing factories. (Author)

Lipatova, T. E., Budnikova, V. A., and Lipatov, Yu. S.
THE INTERACTION OF POLYMERS WITH FILLERS. PT. 5. EFFECT OF THE CONDITIONS OF POLYMER APPLICATION TO GLASS FIBERS AND OF THE TREATMENT OF GLASS FIBERS ON THE POLYMER PROPERTIES. [1963] 7p.
Order from ATS $12.00 ATS-56P66R

Trans. of Vysokomolekul[yarnye] Soedin[eniya] (USSR) 1962, v. 4, no. 9, p. 1398-1403.

DESCRIPTORS: *Glass textiles, *Polymers, Additives.

Melentev, P. V., Surkov, K. S., and Naida, M. A.
APPARATUS FOR MEASURING STRETCH, E. G., IN TEXTILE FIBERS. 8 June 62, 7p.
Order from OTS or SLA $1.10 63-10834

Trans. of Russian patent 125,937, appl. filed 4 May 59 under 626,915/28 (pub. in #Byulleten' Izobretenii (USSR) 1960, no. 3).

DESCRIPTORS: *Test equipment, Measurement, Design, Deformation, *Fibers, Textiles, Fibers (Synthetic), *Elasticity, Tensiometers.

Nemchenko, E. A.
ELASTIC PROPERTIES OF STAPLE FIBERS. 22 June 62, 10p.
Order from OTS or SLA $1.10 63-10786

Trans. of Khim[icheskie] Volokna (USSR) 1959, no. 6, p. 47-49.

DESCRIPTORS: *Fibers, *Elasticity, Compressive properties, Volume, Air, Textiles, Measurement, Fibers (Synthetic).

Rusakov, A. K., Romanov, Yu. G., Fainberg, Z. I.
EXPERIENCE IN SPINNING OMITTING THE ROVING STAGE (Opyt Bezrovnichnogo Pryadeniya) tr. by B. Ribush. [1962] [9]p. (foreign text included). [CSIRO] Trans. no. 5868.
Order from OTS or SLA $1.10 63-13602

Trans. of [Tekstil'naya Promyshlennost'] (USSR) 1961, v. 21, no. 5, p. 43-45.

DESCRIPTORS: Industrial equipment, *Fibers, Design, Operation, *Textile industry.

Serkov, A. T., Kotomina, I. N., and Shubina, E. V.
SURFACE PHENOMENA DURING THE FORMATION OF VISCOSE FIBERS, III (Issledovanie Poverkhnosl-nykh Yavlenii pri Formovanii Viskoznykh Volokon). 15 June 62 [8]p. (2 figs. omitted, foreign text included) 4 refs.
Order from OTS or SLA $1.10 63-10806

Trans. of Khim[icheskie] Volokna (USSR) 1961, no. 4, p. 33-34.

DESCRIPTORS: Surface properties, *Deformation, *Viscose, Fibers (Synthetic), Production, Extrusion, Nozzles, Velocity, Textiles, *Fibers.

Sielemann, K.
A MODERN TWO-STAGE WEB BLEACHING PLANT AND ITS APPLICATION POSSIBILITIES FOR A COMBINED SODIUM CHLORITE BLEACH (Eine Moderne Zweistufige Strangbleichanlage und ihre Einsatzmöglichkeiten für eine Kombinierte Natrium-chloritbleiche). [1962] [10]p. (foreign text included).
Order from SLA $1.10 62-20201

Trans. of SVF-Fachorgan [für Textilveredlung] (Switzerland) 1962, v. 17, no. 1, p. 67-71.

DESCRIPTORS: *Bleaching agents, Sodium compounds, *Chlorites, *Peroxides, Machines, Industrial plants, Textile industry.

Voigt, W.
ON A SIMPLE METHOD FOR MEASURING THE THICKNESS OF VERY THIN FIBERS AND THREADS. [1962] 2p. (figs. omitted).
Order from SLA $1.10 63-10010

Trans. of Optik (West Germany) 1954, v. 11, no. 11, p. 509-510.

DESCRIPTORS: Measurement, *Threads, *Fibers, *Microscopes, Micrometers, Instrumentation, *Thickness.

Paints and Finishes

METHOD OF SURFACE PLATING METALLIC BODIES AND PLATED METALLIC BODIES OBTAINED BY THIS METHOD. [1962] 15p.
Order from OTS or SLA $1.60 63-10260

Trans. of Swiss patent 308,281, cl. 44b, filed 29 Jan 52, registered 15 July 55, pub. 16 Sep 55, by the Tainton Co., Baltimore (USA).

DESCRIPTORS: *Plating, *Metal coatings, Metals, Solids, Powder metals.

PROCESS FOR THE COVERING OF A METAL OBJECT WITH A METAL LAYER. [1962] 4p.
Order from OTS or SLA $1.10 63-10267

Trans. of Dutch patent 98,545, issued 17 July 61, pub. 16 June 61, appl. 110,539, filed 5 Sep 57, pub. 15 Feb 61 (priority G. B. 10 Sep 56) by The Tainton Co., Baltimore (U. S. A.).

DESCRIPTORS: *Metal coatings, Metals, Solids, *Plating, Powder metals, Chemical compounds.

Mikusch, J. D. von.
CHEMICAL FACTS ON UNSAPOL-CONDENSATION. [1962] 7p. (figs. omitted) 6 refs.
Order from SLA $1.10 62-20454

Trans. of Farbe und Lack (West Germany) 1960, v. 66, no. 1, p. 10-13.

DESCRIPTORS: *Condensation reactions, Fatty acids, Saponification, Oils, *Binders, Varnishes, Coatings, Moistureproofing, Chemical reactions.

Zubov, P. I. and Lepilkina, L. A.
APPARATUS FOR INVESTIGATION OF INTERNAL STRESSES IN POLYMER COATINGS (Pribor dlya Izucheniya Polimernykh Pokrytii). [1962] [5]p. (foreign text included) 3 refs.
Order from OTS or SLA $1.10 63-10839

Trans. of Akad[emiya] Nauk SSSR. Vestn[ik] 1962 v. 32 [no. 6] p. 49-50.

DESCRIPTORS: *Polymers, *Coatings, *Test equipment, *Stresses, Film, Mechanical properties, Design, Adhesion.

Photographic Materials

PHOTO-SENSITIVE AND ELECTRO-CONDUCTIVE FILM FOR PHOTOGRAPHIC MATERIALS. [1962] 4p. (figs. omitted).
Order from OTS or SLA $1.10 62-20407

Trans. of published Japanese patent 2248/62.

DESCRIPTORS: *Photographic film, *Electrophotography, Photoelectrical materials, Photographic chemicals.

Müller, R.
CONTRAST TRANSMISSION OF PHOTOGRAPHIC EMULSIONS. [1962] 15p. 16 refs.
Order from SLA $1.60 63-10780

Trans. of AGFA [Aktiengesellschaft für Photofabrikation,] Leverkusen. Mitteilungen aus den Forschungslaboratorien der A G F A Leverkusen-München (Germany) 1961, v. 3, p. 198-205.

DESCRIPTORS: *Phtographic emulsions, Contrast media, *Light transmission, *Photographic film, Photographic equipment, Measurement, Microphotometers.

Plastics

PROTECTIVE COATINGS ON ARTICLES AND PROCEDURE FOR THE PREPARATION OF THESE COATINGS. [1962] 1p.
Order from OTS or SLA $1.10 63-10886

Partial trans. (claims only) of Belgian patent 542,094, appl. 15 Oct 55, issued 31 Oct 55 (French priority, 30 Mar 55) by Knapsack - Griesheim A. G.

DESCRIPTORS: *Plastic coatings, Preservation, Preparation, *Polyethylene plastics, Nitrogen, Powders, Processing.

Gorling, P.
BEHAVIOR OF HYDROPHILIC HYDRATE CELLULOSE GEL FILMS IN THE COURSE OF THE DRYING PROCESS. (Verhalten Hydrophiler Gelfilme aus Celulosehydrat Beim Trocknen). Apr 62 [33]p. 8 refs.
Order from SLA $3.60 63-10791

Trans. of das Papier (West Germany) 1962, v. 16, no. 1, p. 9-18.

DESCRIPTORS: *Hydrates, *Cellulose, *Gels, *Films, Dehydration, Processing, Mechanical properties.

Korstylev, B. N. and Kozlov, P. V.
INVESTIGATION OF RELAXATION PROCESSES IN CELLULOSE ESTER FILMS. 2 Nov 62 [14]p. 8 refs.
Order from OTS or SLA $1.60 63-10840

Trans. of Vysokomol[ekulyarnye] Soed[ineniya] (USSR) 1959, v. 1, no. 6, p. 793-798.

DESCRIPTORS: *Cellulose esters, *Films, Surface properties, Relaxation time.

As a result of a short thermal treatment of thin triacetate films at high temperature, a significant improvement in their mechanical properties was found. This treatment is connected with relaxation processes occurring in the films which lead to a decrease in internal stresses and to an increase in the packing density of the molecular chains of the film-forming substance. (Author)

Li, Li-shen, Andreeva, N. S., and Kargin, V. A.
X-RAY EXAMINATION OF POLYETHYLENE SINGLE CRYSTALS AT VARIOUS TEMPERATURES, tr. by G. C. and D. K. 8 Mar 62, 7p. 15 refs. T. 1354; [DSIR] NLL M 8847.
Order from OTS or SLA $1.10 62-32819

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 8, p. 1238-1242.

DESCRIPTORS: *Polyethylene plastics, Single crystals, X-ray diffraction analysis, Lattices, Thermal expansion.

An X-ray study was conducted on polyethylene single crystals at temperatures from -47°C to close to the m. p. The values of the coefficients of linear expansion α_a and α_b in this range were found. The difference between the mean square displacements of the polymer chains and the equilibrium position with changing temperature was evaluated. It was found that polyethylene single crystals undergo thermal breakdown by a stepwise mechanism and that at about 100°C, an abrupt weakening of the bond forces between the individual ribbons making up the single crystals sets in. An abrupt increase in certain unit cell parameters at a temperature below the m. p., which is bound up with the breakdown of the single crystals into ribbons, appears to be characteristic of polymer single crystals. (Author)

Mikhailov, N. V., Tokareva, L. G., and Fainberg, E. Z.
ON THE COMPATIBILITY AND MECHANISM OF STABILIZATION OF FIBER-FORMING POLYMER MIXTURES. 2 Nov 62 [14]p. 10 refs.
Order from OTS or SLA $1.60 63-10836

Trans. of Vysokom[olekulyarnye] Soed[ineniya] (USSR) 1959, v. 1, no. 3, p. 404-409.

DESCRIPTORS: *Polymers, *Plastics, Fibers (Synthetic), Compatibility, Stabilization, Chemical bonds, Acetyl radicals, Cellulose compounds, *Vinyl chlorides, Nitrocellulose, Chlorination, Heat of solution.

The compatibility of the polymers diacetyl cellulose-chlorinated polyvinyl chloride and nitrocellulose-chlorinated polyvinyl chloride was investigated. The data are based on measurements of the heat effect of the polymers mixed in a common solvent and mixed mechanically. The thermooxidative breakdown of the polymers was investigated. Polymer additions were shown to exert a stabilizing and plasticizing effect on the polymers. On the basis of studies with nitrocellulose and chlorinated polyvinyl chloride, a reciprocal stabilizing effect was shown of two components of the mixture. The total thermodynamic and thermooxidation data obtained confirm the existence of a stabilizing mechanism involving changes in intermolecular bonds which lead to strengthening or linking of labile groups in the molecule. (Author)

Oda, Ryohei.
[NEW METHOD OF SYNTHESIZING STYRENE].
[1962] 3p.
Order from SLA $1.10 62-10120

Trans. of [Kyoto Daigaku Kagaku Kenkyusho Hokoku] (Japan) 1947, v. 14, p. 91-92.

DESCRIPTORS: *Styrenes, Synthesis (Chemistry), Amines, Salts, Resins, Polymerization, Sulfonic acids, Fatty acids, Ethylenes, Plastics.

Simionescu, C., Feldman, D., and Vasiliu, C.
GRAFTING OF CARBOXYMETHYLCELLULOSE WITH ACRYLONITRILE. [1962] [26]p. 19 refs.
Order from SLA $2.60 63-10818

Trans. of Faserforschung und Textiltechnik (Germany) 1962, v. 13, no. 2, p. 70-79.

DESCRIPTORS: *Acrylonitrile polymers, *Carboxymethylcellulose, *Cellulose, *Copolymerization, Polymers, Polymerization, *Graft polymers.

Rubber and Elastomers

Malz, Hugo, Lober, Friedrich, and Kempermann, Theo.
STABILIZATION OF SYNTHETIC RUBBER. 27 Nov 61, 4p.
Order from OTS or SLA $1.10 63-10895

Trans. of German patent 1,103,571, 30 Mar 61, appl. 27 Dec 58, by Farbenfabriken Bayer Co.

DESCRIPTORS: Stabilization, *Synthetic rubber, Esters, Sulfur compounds, Phosphorus acids.

Oseabov and Schmidt.
THE PROGRESS OF THE SOVIET RUBBER INDUSTRY. [1962] 6p.
Order from OTS or SLA $1.10 63-10410

Trans. from Pravda [Moscow] (USSR) 1935, no. 295.

DESCRIPTORS: *Synthetic rubber, Rubber, *Industries, Production, Economics.

Perrotti, G. and Castelfranchi, G.
NEW POSSIBLE STABILIZERS FOR SYNTHETIC ELASTOMERS. 11 Apr 62 [16]p. 4 refs.
Order from SLA $1.60 63-10819

Trans. of [la] Chimica e l'Industria (Italy) 1960, v. 42, p. 854-858.

DESCRIPTORS: Stabilization, *Elastomers, Diene synthesis, *Naphthalenes.

Wood and Paper

IMPROVEMENTS IN PAPER RULING MACHINES, tr. by J. R.-P. 5 Mar 63, 3p. (fig. omitted).
Order from OTS or SLA $1.10 63-19066

Trans. of French patent 1,025,484, gr. 17, cl. 2, by Fonderies Deberny & Peignot, appl. filed 5 Oct 50, granted 21 Jan 53, pub. 15 Apr 53.

DESCRIPTORS: *Paper, *Machines, Design, Operation.

Arlov, Anders P.
PITCH PROBLEMS IN PAPER MILLS. [1962] [16]p. 22 refs.
Order from SLA $1.60 63-10617

Trans. of Norsk Skogindustri (Norway) 1962, v. 16, no. 3, p. 87-96.

DESCRIPTORS: *Pitch (Material), *Paper, Industrial plants, Wood pulp, Processing.

Brecht, Walter, Räderer, Paul, and Weitzel, Wolfgang
CURLING TENDENCY OF PAPERS (Über die Rollneigung von Papieren). [1961] [15]p. (7 refs. omitted) 2 refs.
Order from SLA $1.60 61-10715

Trans. of [das Papier] (West Germany) 1959, v. 13, no. 11/12, p. [237]-244
Another trans. is available from SLA mi$1.80, ph$1.80 as 60-10128, Aug 59, 10p.

DESCRIPTORS: *Paper, Moisture, Humidity, Wood pulp fibers, Test methods.

For abstract see Technical Translations 3: 178, 1960.

Christensen, Chr. W.
UNCERTAINTIES IN THE PRACTICAL DETERMINATION OF THE OFFSET PRINTABILITY OF PAPER [1962] 12p. (figs. omitted).
Order from SLA $1.60 63-10179

Trans. of Norsk Skogindustri (Norway) 1961, v. 15, p. 326-333.

DESCRIPTORS: *Paper, *Lithography, Ink, Determination, Mechanical properties.

Herminge, L.
SOME FACTORS INFLUENCING THE PRODUCTION CAPACITY OF A YANKEE MACHINE: THERMAL CONDUCTIVITY AND CYCLINDER DIAMETER.
July 62, 5p. (figs. omitted) 2 refs.
Order from SLA $1.10 62-18883

Trans. of Svensk Pappers-tidning, 1962, v. 65, no. 8, p. 322-325.

DESCRIPTORS: *Paper, Production, Dehydration, Evaporation, Machines, Design, Thermal conductivity, Cylindrical bodies, *Driers (Apparatus).

Murto, Jaakko.
CHIPPING OF PULPWOOD. [1962] [13]p. (refs. omitted).
Order from SLA $1.60 63-10756

Trans. of [Paperi ja Puu] (Finland) 1947, v. 29, p. 263-268, 270-273.

DESCRIPTORS: *Wood pulp, Chipping hammers, *Sulfites, Cutting tools, *Paper industry, *Wood pulp machines.

Nylinder, Per.
SOLID WOOD CONTENT IN SOME CATEGORIES OF SMALL TIMBER (Fastmasseprocenten Hos Nagra Klenvirkessortiment). May 61, 25p. FPRB Trans. 144
Order from NRCC NRCC C-3871

Trans. of Skogshögskolan (Sweden). Research Notes-R21, 1959.

DESCRIPTORS: *Wood, Fiberboard, Sawmills, Wastes (Industrial), Wood pulp, Moisture, Volume, Weight.

Renard, J.
THE INFLUENCE OF HUMIDITY ON PRINTING PAPERS. Jan 63, 25p. (figs. omitted) 5 refs.
Order from SLA $2.60 63-10913

Trans. of A[ssociation] T[echnique de l]'I[ndustrie] P[apetiere]. Bulletin (France) 1959, no. 4, p. 201-214.

DESCRIPTORS: *Humidity, Printing, *Paper, *Hygrometers, Control, Measurement, Test methods

Weber, Ernst
PAGED BLOCK CALENDAR, tr. by J. R. -P. 12 Dec 62 3p. (figs. omitted).
Order from OTS or SLA $1.10 63-13750

Trans. of German patent 893, 639, cl. 11e, gr. 6, pat. from 20 Feb 45, appl. announced 12 Feb 53, grant announced 10 Sep 53, pub. 19 Oct 53 (priority claimed in Switzerland from 27 Dec 43).

DESCRIPTORS: *Office equipment and supplies, Paper, Sheets, Fastenings.

MATHEMATICS

Akhiezer, Nauk Il'ich. and Krein, M.
SOME QUESTIONS IN THE THEORY OF MOMENTS, tr. by W. Fleming. 1962, 265p.
Order from American Mathematical Society, 190 Hope St., Providence, 6, R. I. $6.10

Trans. of mono. [O Nekotorykh Voprosakh Teorii Momentav, Kharkov, 1938, 255p.].

DESCRIPTORS: *Functional analysis.

Akhiezer, Naum Il'ich and Glazman, I. M.
THEORY OF LINEAR OPERATORS IN HILBERT SPACE, VOL. 2, tr. by Merlynd Nestell. 1963, 218p.
Order from Frederick Ungar Publishing Co., 131 E. 23d St., New York 10, N. Y. $7.50

Trans. of mono. [Teoriya Lineinykh Operatorov v Gil'bertovom Prostranstve, Moscow/Leningrad, 1950] chap. 6 to appendix 2.

DESCRIPTORS: *Operators (Mathematics), Functional analysis

Fisz, Marek.
PROBABILITY THEORY AND MATHEMATICAL STATISTICS, 3D ED. tr, by R. Bartoszynski. 1963, 677p.
Order from John Wiley and Sons,. Inc., 440 Park Ave., So., New York 16, N. Y. $15.75

Trans. of unidentified Polish mono., n. p., n. d.

DESCRIPTORS: *Applied mathematics, *Probability, Theory

Fok, V. A.
NEW ASYMPTOTIC EXPRESSION FOR BESSEL FUNCTIONS, tr. by L. A. Berry. 8 June 62 [5]p. (equations omitted).
Order from OTS or SLA $1.10 62-32138

Trans. of Akademiya Nauk SSSR. Comptes Rendus (Doklady) de l'Academie des Sciences de L'U. R. S. S., 1934, v. 1, no. 3, p. 97-99.

DESCRIPTORS: *Bessel functions, Series, Polynomials, Differential equations, Numerical analysis.

Krylov, A. L.
MODELS WITH A FINITE NUMBER OF DEGREES OF FREEDOM FOR A CERTAIN CLASS OF PROBLEMS OF MATHEMATICAL PHYSICS DIFFERENCE PROBLEMS WITH THE LAW OF CONSERVATION). [1962] 11p. 4 refs.
Order from OTS or SLA $1.60 63-10158

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 142, no. 3, p. 572-575.

DESCRIPTORS: *Applied mathematics, Physics, *Fluid flow, Viscosity, Equations of motion, Difference equations, Operators (Mathematics), Integration, *Differential geometry.

Savinov, G. V.
ANALOG COMPUTER SOLUTION OF THE PROBLEM OF ACCUMULATION OF PERTURBATIONS. Apr 63 [7]p. 10 refs.
Available from AIAA in Its Journal, v. 1, no. 4, $5.00

Trans. of Moscow U. Vestnik. Seriya 1: Matematika, Mekhanika (USSR) 1961 [v. 16] no. 3, p. 62-76.

DESCRIPTORS: *Analog computers, *Perturbation theory, *Linear systems, Equations of motion, *Nonlinear systems, Mathematical analysis, Dynamics, *Differential equations, Integration, Scheduling

Suleimanova, Kh. R.
STOCHASTIC MATRICES WITH REAL CHARACTERISTIC NUMBERS. [1962] 6p. 2 refs.
Order from OTS or SLA $1.10 62-20325

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1949, v. 66, no. 3, p. 343-345.

DESCRIPTORS: *Real variables, Numbers, *Probability, Matrix algebra.

The paper formulates results related to the determination of the conditions for which the specified set of n numbers is the set of characteristic numbers of some n-th order stochastic matrix.

Töplitz, Otto.
THE CALCULUS: A GENETIC APPROACH, tr. by Luise Lange. 1963, 192p.
Order from University of Chicago Press, 5750 Ellis Ave., Chicago 37, Ill., $6.50

Trans. of unidentified German language mono., n. p., n. d.

DESCRIPTORS: Mathematics, *Calculus

Yarov-Yarovoi, M. S.
ON THE COMPUTATION OF HIGHER PARTIAL DERIVATIVES OF A COMPOSITE FUNCTION [REPT. 1]. [1962] 15p. 2 refs.
Order from OTS or SLA $1.60 63-10377

Trans. of Moscow U. Vestnik [Seriya Matematiki Mekhanika, Astronomii, Fiziki, Khimii] (USSR) 1958 [v. 13] no. 1. p. 87-95.

DESCRIPTORS: *Partial differential equations, *Functions, *Operators (Mathematics), Integration, Polynomials, Series.

Yarov-Yarovoi, M. S.
ON THE COMPUTATION OF HIGHER PARTIAL DERIVATIVES OF THE COMPOSITE FUNCTION, REPT. 2. [1962] 13p. 2 refs.
Order from OTS or SLA $1.60 63-10378

Trans. of Moscow U. Vestnik [Seriya Matematiki, Mekhaniki, Astronomii, Fiziki, Khimii] (USSR) 1958 [v. 13] no. 2, p. 67-75.

DESCRIPTORS: *Partial differential equations, *Functions, Integration, Polynomials, Equations, Series.

Yarov-Yarovoi, M. S.
ON THE RECURRENT RELATIONS FOR THE COMPUTATION OF THE DERIVATIVES OF COMPOSITE FUNCTIONS. [1962] 9p. 3 refs.
Order from OTS or SLA $1.10 63-10359

Trans. of Moscow U. Vestnik. [Seriya Matematiki, Mekhanika, Astronomii, Fiziki, Khimii] (USSR) 1958 [v. 13] no. 6, p. 31-37.

DESCRIPTORS: *Partial differential equations, *Functions, Integration, Polynomials, Equations.

Computing Devices

Efimov, I. A.
AN INVESTIGATION OF THE MAGNETIC REVERSAL TIME OF FERROMAGNETIC FILM ELEMENTS, tr. by E. G. Peters. [1962] [11]p. (figs. omitted) 2 refs. [DSIR] NLL M. 3564.
Order from OTS or SLA $1.60 62-24906

Trans. of mono. [bulletin] Issledovanie Vremeni Peremagnichivaniya Ferromagnitnykh Plenochnykh Elementov [Moscow, 1961, 23p.].
Another trans. is available from OTS or SLA $2.60 as 62-15446, JPRS-11980, 17 Jan 62 [25]p.

DESCRIPTORS: *Ferromagnetic materials, *Metal films, Physical properties, *Computers, Magnetism, Time, Memory devices.

For abstract see Technical Translations 8: 378, 1962.

Schaefer, E.
ELECTRONIC PERMANENT MEMORIES. [1962] 28p. 51 refs.
Order from SLA $2.60 62-20175

Trans. of Elektronische Rechenanlagen (West Germany) 1961, v. 3, no. 5, p. 197-205.

DESCRIPTORS: *Computer storage devices, *Memory devices, Electrophotography, Storage tubes, Superconductivity, Inductance, Magnetic core storage, Punched cards, Capacitors.

Computer memories often contain information which rarely changes, but which must be read out frequently. Such information can be stored more economically in so-called read-only memories, or permanent stores, than in the erasable working storage. This paper shows how the same problem appears in several fields having different requirements. Descriptions follow of some technical solutions that have been developed during recent years. Finally, distinguishing characteristics are discussed which may be useful in the classification of the methods described. (Author)

MECHANICS

SOVIET ABSTRACTS: MECHANICS, 1962, NO. 8, ABSTRACTS 8A1-8V618. [1962] [61]p.
Order from OTS or SLA $6.60 63-19221

Trans. of Soviet entries from Referativnyi Zhurnal. Mekhanika (USSR) 1962, no. 8.

DESCRIPTORS: *Indexes, *Mechanics, Scientific research, Celestial mechanics, Motion, Stability, *Magnetohydrodynamics, *Fluid mechanics, Aerodynamics, Rockets, *Hydrodynamics, *Hydraulic research, Viscosity, Liquids, *Boundary layer, *Heat transfer, Gases, *Elasticity, *Plasticity, Theory, *Soil mechanics, Structural parts, Materials, Mechanical properties, Plasma physics.

SOVIET ABSTRACTS: MECHANICS, 1961, NO. 9, ABSTRACTS 9A2-9V560. [1962] [155]p.
Order from OTS or SLA $11.50 63-19220

Trans. of Soviet abstracts from Referativnyi Zhurnal. Mekhanika (USSR) 1961, no. 9.
Another Trans. of abstracts pertaining to Communist China is available from OTS or SLA $3.60 in 62-23417, JPRS-12734, 28 Feb 62 [38]p.

DESCRIPTORS: *Abstracts, *Mechanics, Scientific research, Celestial mechanics, Magnetohydrodynamics *Hydrodynamics, *Hydraulic research, *Aerodynamics Viscosity, Liquids, Gases, Boundary layer, Heat transfer, *Elasticity, *Plasticity, Theory, Soil mechanics, Structural parts, Materials, Mechanical properties, Plasma physics.

SOVIET ABSTRACTS: MECHANICS, 1960, NO. 11, ABSTRACTS 14020-15489P. [1962] [155]p.
Order from OTS or SLA $11.50 63-19219

Trans. of Soviet abstracts from Referativnyi Zhurnal. Mekhanika (USSR) 1960, no. 11.

DESCRIPTORS: *Abstracts, *Mechanics, Scientific research, Space flight, Theory, Magnetohydrodynamics *Hydrodynamics, *Hydraulic research, *Aerodynamics Viscosity, Liquids, Gases, Boundary layer, Heat transfer, *Elasticity, *Plasticity, Theory, Soil mechanics, Structural parts, Materials, Mechanical properties.

Bordoni, P. G.
ELECTROACOUSTIC METHOD FOR EXPERIMENTAL RESEARCH ON ELASTICITY. 27 Oct 62, 26p. (figs. omitted) 18 refs.
Order from SLA $2.60 62-20433

Trans. of Nuovo Cimento (Italy) 1947, ser. 9, v. 4, no. 3/4, p. 177-200.

DESCRIPTORS: *Elasticity, Measurement, *Acoustics, *Electrostatics, Cylindrical bodies, Rods, Vibration, Excitation, Frequency modulation, Statistical analysis, *Measuring devices (Electrical and electronic).

A new method for measuring the principal elastic parameters of solids (modulus of elasticity and Poisson ratio) and their internal damping (friction) is described. First, the principle of the method has been indicated which uses the novel technique of frequency modulation in order to excite electrostatically and to detect with a single electrode the longitudinal vibrations of cylindrical bars. Then, the principal improvements are described which distinguish the apparatus which were used from the preceding capacity vibrometers. Finally, some examples of the results are given which the new method permits to attain in the study of the elastic properties of materials, discussing particularly the statistical interpretation which must from a physical point of view be given to the smallest amplitudes of vibrations which can be measured by the new method. (Author)

Zadoyan, M. A.
THERMAL STRESSES IN INFINITE CONCRETE SLABS WITH CONSIDERATION OF CREEP. [1962] 21p. 7 refs.
Order from OTS or SLA $2.60 63-10198

Trans. of Akad[emiya] Nauk Armyan[skoi] SSR [Erevan]. Izv[estiya. Seriya] Fiz[iko]-Mat[ematicheskikh] Nauk, 1958, v. 11, no. 1, p. 27-46.

DESCRIPTORS: *Concrete, *Thermal stresses, *Creep, Temperature, Cooling, Air, Mathematical analysis.

The stress condition of an infinite concrete slab is examined for cases of harmonic variation of the temperature of the outside air and cooling of the slab surface.

Solyanik-Krassa, K. V.
SOLUTION OF AN AXIALLY SYMMETRIC PROBLEM IN SPHERICAL COORDINATES, tr. by Donald C. Rich and George F. Hill. 20 Feb 62 [24]p. AOMC Trans. nr 12-62.
Order from OTS or SLA $2.60 62-23283

Trans. of [Politekhnicheskii Institut] Leningrad. [Trudy] (USSR) 1955, no. 178, p. 133-149.

DESCRIPTORS: *Bodies of revolution, *Axially symmetric flow, Stresses, Load distribution, *Spheres, Elasticity, Differential equations, Integrals, Special functions.

Aerodynamics and Pneumatics

Drakin, I. I.
AERODYNAMIC AND RADIATION HEATING DURING FLIGHT. 11 Jan 63 [129]p. 53 refs. FTD-TT-62-697.
Order from OTS or SLA $10.10 63-15523

Unedited rough draft trans. of mono. Aerodinamicheskii i Luchistyi Nagrev v Polete, Moscow, 1961, 93p.

DESCRIPTORS: *Aerodynamic heating, Aerodynamics, Superaerodynamics, *Supersonic flight, *Thermal radiation, *Shielding, Thermal stresses, Heat transfer, Structures, Mathematical analysis, Emissivity.

In connection with the widespread use of supersonic flying craft, close attention has been given to problems associated with aerodynamic and radiant heating in flight. Of particular importance is the heat shielding of the crew, of the structure and equipment, the selection of structural materials, and the determination of the thermal stresses in the structure. To solve these problems, it is necessary first to determine the temperature of the exterior shielding. This is the purpose of this work. (Author)

Predvoditelev, A. S., ed.
PHYSICS OF HEAT EXCHANGE AND GAS DYNAMICS. 1963, 99p.
Order from CB $17.50

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: Physics, Heat transfer, *Fluid dynamic properties, *Aerodynamics, Supersonic characteristics, Shock waves, *Aerodynamic heating

Hydrodynamics, Hydraulics, and Hydrostatics

Ginzburg, I. P.
APPLIED FLUID DYNAMICS, tr. by Albert Barouch. 1963, 258p. 69 refs. PL-480 NASA; NASA TT-F-94.
Order from OTS $2.75 62-11032

Trans. of mono. Prikladnaya Gidrogazodinamika, Leningrad, 1958 [337p.].

DESCRIPTORS: *Fluid mechanics, *Hydrodynamics, *Hydraulic research, Equations of motion, Fluid flow, Pipes, Stability, Turbulence, Gas flow, Friction, Continuum mechanics.

This book discusses some of the problems of fluid mechanics which are frequently met with in the engineering design of various machine assemblies and engineering installations. The author examines the steady and unsteady flow of liquids and gases in pipes, their efflux from vessels, problems of the determination of the filling and emptying times of a vessel for a gas, the effect of a jet on a barrier, etc. The theoretical calculations discussed in this book are illustrated by means of practical examples. Some new methods of solution of the problems of gas flow through pipes, of gas efflux from vessels, of water hammer, and others, are also given. The unsteady motion of gases is only briefly considered in connection with problems of the emptying of gases from vessels.

Jarocki, Walenty.
A STUDY OF SEDIMENT (Badanie Rumowiska) tr. by Jerzy Dlutek. 1963 [255]p. 96 refs. PL-480 Int.
Order from OTS $2.75 60-21273

Trans. of mono. Ruch Rumowiska w Ciekach (Sediment Movement in Streams) Gdynia, 1957, pt. 1, p. 1-180.

DESCRIPTORS: *Sedimentation, *Hydrodynamics, Sources, River currents, Silt, Soil mechanics, Erosion, Analysis, Measurement, Samplers, Numerical methods and procedures.

Contents:
Introductory remarks
Water action and its products
Principles of sediment movement
Deformations of river channels
Sampling and measurement of sediment in streams
Laboratory analysis of sediment
Computation of the quantity of sediment by observation
Empirical methods of computing quantity of sediment.

Statics, Kinematics, and Kinetics

Nikitina, L. P.
A MORE ACCURATE EQUATION OF STRESS RELAXATION (Utochnenie Uravneniya Relaksatsii Napryazhenii. Oct 61 [20]p. (foreign text included) 7 refs. NLL M. 3496.
Order from OTS or SLA $1.60 62-23964

Trans. of #Zavodsakya Laboratoriya (USSR) 1961, v. 27, no. 6, p. 730-738.

DESCRIPTORS: *Bolts, Stresses, *Relaxation time, Equations, Loading (Mechanics), Elasticity, Plasticity.

An analysis is given of the effect of initial strain and repeated load application on relaxation during the extension of bolt materials. Tests have shown that resistance to relaxation depends not only on the magnitude of initial elastic strain, but also on the plastic strain of material, which may be produced at the instant of load application before relaxation. A general, more accurate stress-relaxation formula is given, showing that the increased resistance to relaxation after repeated load applications is due to an accumulation of plastic strains. (Author)

Wisniewski, Stanislaw.
AN INVESTIGATION OF LARGE DEFLECTIONS OF A TRUNCATED CONE-SHAPED SHELL COMPRESSED BY FORCES UNIFORMLY DISTRIBUTED ALONG THE EDGES. [1962] [5]p. (fig. omitted) 2 refs.
Order from SLA $1.10 62-20053

Partial trans. (p. 73-74, 76-79) of Archiwum Budowy Maszyn (Poland) 1961, v. 8, no. 1, p. 73-79.

DESCRIPTORS: *Structural shells, *Conical bodies, Loading (Mechanics), Compressive properties, Deformation, Deflection, Graphic analysis.

The article deals with the description and results of experiments with large deflections of truncated cone shells with small angles of inclination between the generatrix and the base, when these shells are subjected to compression by forces uniformly distributed along the edges. Experimental results have been compared with the theoretical predictions, calculated on the basis of author's earlier work, (Archiwum Budowy Maszyn 6: no. 4, 1959; available in translation from SLA as 62-20428) taking into account the tolerances in the fabrication of the test shells and the accuracy of the experimental equipment. (Author)

METALLURGY

SOVIET INDUSTRIAL DEVELOPMENT: SELECTED TRANSLATIONS NO. 55. 20 June 61 [66]p. JPRS: 9466.
Order from OTS or SLA $6.60 61-23932

Trans. of Vestnik Statistiki (USSR) 1960, no. 11 [p. 66-67]; Tekhnika Molodezhi (USSR) 1960 [v. 28] no. 11 [p. 12-13, 23]; Planovoe Khozyaistvo (USSR) 1960 [v. 37] no. 12 [p. 78-82]; Smena (USSR) 1960 [v. 37] no. 21 [p. 3]; Nauka i Zhizn' (USSR) 1960 [v. 27] no. 11 [p. 64] and 29 selected articles from 1960-61 issues of 10 Russian newspapers.

DESCRIPTORS: *Industrial production, *Metallurgy, *Steel industry, *Rolling mills, *Annealing, Sheets, Blast furnaces, Coke, Coal, Metals, Cleaning, Open-hearth furnaces, Smelting, Welding, *Electric power production, Pipes, Casting, Industrial plants, Ores (Metal sources), Metals, Cleaning

Contents:
Civilization depends on ferrous metallurgy
Sarbai mine is the largest in the USSR
First stage in the "1700" rolling mill completed in record time
Unique annealing furnace produced by Moscow Tube Plant
What can be learned from experience in the construction of sheet rolling mills, by I. Privalov
Steel production news from Petrovsk-Zabaikal'skii Metallurgical Plant
Socialist competition in full swing
Blast furnace renovated at Novo-Tula Plant, by Yu. Lakhov and V. Lazarev
First blast furnace in Western Siberia
All-Russian Seminar in Magnitogorsk
The Chelyabinsk Electro-Metallurgical Combine, by I. Kisilev
To improve the accounting of basic funds of the coal industry, by Yu. Rudinkin
The rebirth of steel
Metals cleaned by spraying, by E. Ganov
Means of fulfilling the plan ahead of time
More about Magnitogorsk Rolling Mill, by N. Vasil'chenko
Giant open-hearth furnace, by K. Markov
The Cherepovets Metallurgical Plant
Debate on new steel-smelting method continues, by A. Krasilov
To provide steel smelters with prepared scrap
Welding speed increased by Chelyabinsk plant, by N. Khor'kov
The struggle for cheap electric power, by V. Lukin
Selected short newspaper items

SOVIET REPORTS ON METALLURGY AND DISLOCATIONS. 24 Apr 63, 20p. 16 refs. JPRS: 18869.
Order from OTS $0.75 63-21658

Trans. of #Fizika Metallov i Metallovedenie (USSR) 1962, v. 14, no. 4, p. 582-588 and 1963, v. 15, no. 2, p. 280-284.

DESCRIPTORS: *Metallurgy, *Dislocations, *Cadmium, Crystal structure, Impurities, Crystal lattice defects, Distribution, *Cobalt alloys, Phase studies

Contents:
The distribution of impurities and dislocations in cadmium crystals, by N. A. Tyapunina and others
Stacking faults and segregations on cobalt-based alloys, by Yu. A. Skakov and Yu. O. Mezhennyi

Brodetskii, L. V. and Pikalov, P. G.
AUTOMATIC HEATING CONTROL FOR BF STOVES, tr. by R. C. Murray. Mar 58 [5]p. [BISI] Trans. 883; [Trans.] no. 4772; [DSIR] NLL M. 4106.
Order from OTS or SLA $1.10 62-24113

Trans. of Stal' (USSR) 1958 [v. 18, no. 1] p. 21-22.

DESCRIPTORS: *Heaters, *Blast furnaces, Control systems, Automatic, Combustion, Voltmeters.

For the automatic control of the combustion in blast furnace stoves systems should be used in which the blowers are run at full load, i.e. those in which the gas consumption is regulated in accordance with the air consumption (so that the stove is heated with the maximum possible gas consumption). It is unnecessary to use isodrome regulators. Regulation can also be effected with an EPP-120 electronic voltmeter with triple contacts. (Author)

Crussard, C., Kohn, A. and others.
STUDY OF THE SEGREGATION OF ARSENIC AND COPPER BY MEANS OF AUTORADIOGRAPHY AND QUANTITATIVE EXAMINATION WITH THE CASTAING MICROSONDE. [1959] [18]p. 11 refs.
Order from SLA $1.60 62-14373

Trans. of Revue de Metallurgie (France) 1959, v. 56 [no. 4] Apr, p. 395-406.

DESCRIPTORS: *Arsenic, *Copper, Separation, *Autoradiography, Microanalysis, Electron beams.

For abstract see Technical Translations 3: 315, 1960.

Fischer, Wilhelm Anton, Hoffmann, Alfred and Shimada, Ryusuke.
THE DECOMPOSITION OF WÜSTITE AT TEMPERATURES BELOW 570°C. IN THE PRESENCE OF IRON. [1961] [20]p. 21 refs.
Order from SLA $1.60 62-14360

Trans. of Archiv f[ür] d[as] Eisenhüttenwesen (West Germany) 1956 [v. 27] 8 Aug, p. 521-529 (Max-Planck Institut für Eisenforschung (West Germany), Communication-679.

DESCRIPTORS: *Wustite, Decomposition, Iron, Material separation, Metallography.

For abstract see Technical Translations 3: 315, 1960.

Gadeau, R.
INFLUENCE OF COLD-WORKING ON THE HARDENING OF BERYLLIUM BRONZE. 7 May 47, 3p. (figs. tables omitted).
Order from SLA $1.10 62-20271

Trans. of la Métallurgie [et la Construction Mécanique] (France) 1946, v. 78, no. 10, p. 15-17.

DESCRIPTORS: *Cold-working, *Hardening, *Beryllium, *Bronze, Metal plates, Heat treatment, Quenching (Cooling), Tests.

Gol'dfarb, E. M. and Legavets, L. V.
IMPROVED OPERATION OF BLAST-FURNACE HOT-BLAST STOVES. Mar/Apr 63, 1500 words.
Order from HB $3.75 HB-5777

Trans. of #Metallurg (USSR) 1963, v. 8, no. 3, p. 3-5.

DESCRIPTORS: *Blast furnaces, *Heaters, Oxygen, Operation.

Gurevich, Yu. G.
EFFECT OF REMELTING OF STEEL ON ITS CONTAMINATION BY TITANIUM NITRIDE. Mar/Apr 63, 1800 words.
Order from HB $4.90 HB-5885

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 7, p. 71-77.

DESCRIPTORS: *Steel, Alloys, *Titanium compounds, Nitrides, Melting, Phase studies, Metallurgy, Analysis.

Heynert, G.
IMPRESSIONS FROM A VISIT TO SOME BLAST FURNACE PLANTS IN THE SOVIET UNION. Mar/Apr 63, 5900 words.
Order from HB $12.70 HB-5869

Condensed trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 24, p. 1727-1739.

DESCRIPTORS: *Blast furnaces, Industrial plants, Operation, Fuels, Design, Economics, Steel industry.

Iodkovskii, S. A., Novitskii, V. K. and others,
INFLUENCE OF MOLD WALL THICKNESS ON THE QUALITY OF INGOTS CAST FROM NICKEL-BASED ALLOYS. 8 Nov 62 [25]p. FTD-TT-62-1241.
Order from OTS $0.75 63-11582

Unedited rough draft trans. of mono. Slitok i Svoitstva Stali (Konferentsiya po Fiziko-Khimicheskim Osnovam Proizvodstva Stali (no. 5) 1959. Trudy) Moscow, 1961, p. 47-60.

DESCRIPTORS: *Nickel alloys, *Casting, Thermal stresses, Fracture (Mechanics), Microstructure, Crystals, Thickness.

The basic defect in ingots cast from high-alloy nickel-based alloys in ordinary molds is internal cracks of thermal origin. Decreasing the mold wall thickness causes a considerable reduction in mold mass, a decrease in ingot solidification rate, a reduction in the temperature difference between the periphery and axis of the ingot, and consequently, an absence of intertal thermal cracks in the ingot. The use of the new thin-wall molds in the plant for casting high-alloy nickel-based alloys leads to an improvement in the quality of 500, 700, and 750 kg ingots, as a result of the elimination of internal cracks and to a decrease in the number of forging rejects detected by ultrasonic monitoring.

Kadinov, E. I. and Khitrik, S. I.
BASIC FACTORS GOVERNING THE MELTING LOSS OF CHROMIUM IN HIGH-CHROMIUM STEEL BATHS DURING OXYGEN LANCING. Mar/Apr 63, 3600 words.
Order from HB $9.70 HB-5778

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 10, p. 50-57.

DESCRIPTORS: *Chromium, *Steel, Alloys, Oxygen, Furnaces, *Melting, Metallurgy.

Krivonosov, V. A. and Sharov, S. I.
THE KINETICS OF SULPHUR TRANSFER FROM IRON TO SLAGS OF THE BLAST FURNACE TYPE [Kinetika Perekhoda Sery iz Chuguna v Shlaki Domennogo Tipa] tr. by R. Hennefeld. [1962] [9]p. 10 refs. Trans. no. CRL/T.809; [DSIR NLL] M.3668.
Order from OTS or SLA $1.10 62-25266

Trans. of Nauchnye Doklady Vysshei Shkoly. Metallurgiya (USSR) 1958, no. 4, p. 28-33. Another trans. is available from BISI £2 15s as BISI-2091, May 62.

DESCRIPTORS: *Iron, *Desulfurization, *Slags, Blast furnaces, Sulfur, Metallurgy, Melting.

Mennenöh, S. and Engell, H. -J.
A METHOD OF MEASURING THE EFFICIENCY OF INHIBITORS IN PICKLING BATHS. Mar/Apr 63, 4100 words.
Order from HB $11.50 HB-5803

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 25, p. 1796-1801.

DESCRIPTORS: *Pickling compositions, Effectiveness, Measurement, *Antioxidants, Brittleness, Electrochemistry, Polarization.

Novozhilov, N. M. and Sokolova, A. M.
CO_2-SHIELDED SPOT WELDING. [1962] 10p. 4 refs.
Order from OTS or SLA $1.10 62-20021

Trans. of Svarochnoe Proizvodstvo (USSR) 1956 [no. 7] p. 10-13.

DESCRIPTORS: *Spot welding, *Carbon dioxide, Fluxes (Fusion), Joints.

The spot welds made with this method have, compared to similar welds made with the submerged arc process, a more desirable shape as far as depth of fusion and weld reinforcement is concerned. With the CO_2-shielded spot welding process sheets of greater thickness can be spot welded than with the flux process. The strength of CO_2-shielded spot welds is no way inferior to that of flux-shielded spot welds. (Author)

Odone, G. and Berruti, V.
APPLICATION OF COLOUR METALLOGRAPHY TO THE STUDY OF PHENOMENA CONNECTED WITH THE MANUFACTURE OF LOW CARBON DEEP DRAWING STEEL SHEETS. Feb 63.
Order from BISI £3 15s BISI-2990

Trans. of la Metallurgia Italiana, 1960, v. 52, no. 11, p. 716-720.

DESCRIPTORS: *Metallography, Production, *Steel, *Sheets, Carbon, Color centers.

Pepperhoff, W., Bühler, H. -E., and Dautzenberg, N.
ON THE CHROMIUM-IRON-CARBON SYSTEM IN THE REGION OF COMMERCIAL FERRO-CHROMES. Mar/Apr 63, 3600 words.
Order from HB $9.40 HB-5750

Trans. of Archiv [für das] Eisenhüttenwesen (West Germany) 1962, v. 33 [no. 9] p. 611-616.

DESCRIPTORS: *Chromium, *Iron, *Carbon, Alloys, Stability, Phase studies, *Metallography.

Semenov, M. E.
EFFECT OF VARIOUS ADDITIONS TO HOT-DIP ALUMINIZING BATHS UPON THE SIZE OF THE INTERMETALLIC ZONE. Mar/Apr 63, 1000 words.
Order from HB $3.00 HB-5906

Trans. of Liteinoe Proizvodstvo (USSR) 1962, no. 7, p. 26-27.

DESCRIPTORS: *Intermetallic compounds, *Alloys, Iron compounds, Aluminum compounds, *Aluminum coatings, Additives, Hot working, *Metallography.

Seulen, Gerhard W.
CONSTRUCTION AND OPERATION OF A STATIC FREQUENCY TREBLER FOR HEATING AND MELTING METAL. [1959] [14]p. 15 refs.
Order from SLA $1.60 62-14404

Trans. of Zeitschrift für Metallkunde (West Germany) 1959, v. 50, no. 5, p. 299-306.

DESCRIPTORS: *Metals, Heating, Melting, *Frequency multipliers, Design.

For abstract see Technical Translations 3: 317, 1960.

Smachnaya, V. F.
PHYSICO-CHEMICAL STUDY OF THE TERNARY SYSTEM Cr_2O_3-ZrO_2-SiO_2. Mar/Apr 63, 1700 words.
Order from HB $4.90 HB-5837

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 11, p. 191-195.

DESCRIPTORS: *Chromium, *Zirconium, *Silicon, *Oxides, Chemical compounds, Physical properties, Chemical analysis, Metallurgy, Furnaces, *Refractory materials.

Stricker, F.
INVESTIGATION OF METHODS FOR DETERMINING THE LAYER THICKNESS OF ZINC COATS. Mar 63.
Order from BISI 6 5s BISI-3134

Trans. of Stahl und Eisen (West Germany) 1962, v. 82 [no. 25] p. 1783-1790.

DESCRIPTORS: *Zinc coatings, Thickness, Magnetic fields, Measurement.

Thews, E. R.
DEFECTS IN DEPOSITION OF ELECTROLYTIC COATINGS, THEIR CAUSES AND REMEDIES. [1962] 9p. 4 refs.
Order from SLA $1.10 63-10019

Trans. of Archiv für Metallkunde (Germany) 1949, v. 3, no. 12, p. 432-436.

DESCRIPTORS: *Electrolysis, Coatings, Nickel, Copper, Brass, Cobalt, Cadmium, Errors, Corrections, *Metal coatings, *Electrodeposition.

Thomas, R. D.
ELECTRICAL ARC-WELDING OF STAINLESS STEELS. June 46, 3p.
Order from SLA $1.10 63-10017

Trans. of Technique (Canada) 1946, v. 21, no. 2, p. 119-120.

DESCRIPTORS: *Arc-welding, *Stainless steel, Electrodes.

Tobias, P.
THE REACTION TEMPERATURE OF COKE AS A CRITERION FOR THE PROGRESS OF THE MELTING OPERATION IN THE CUPOLA. Mar/Apr 63, 3600 words.
Order from HB $9.30 HB-5832

Trans. of Giesserei (West Germany) 1962, v. 49, no. 18, p. 619-623.

DESCRIPTORS: *Coke, *Heat of reaction, Temperature, *Melting, *Cupola furnaces, Metals, Cast iron.

Weiner, R.
ON THE ELECTROLYTIC DEPOSITION OF METALS UNDER THE ACTION OF ULTRASONIC VIBRATION. [1962] 26p. 5 refs.
Order from SLA $2.60 63-10894

Trans. of [Metall] (West Germany) 1961, v. 15, p. 97-101.

DESCRIPTORS: Electroplating, Electrolysis, *Metals, Vibration, *Ultrasonics, *Electrodeposition, Ultrasonic equipment.

Zelikman, A. N.
POWDER METALLURGY OF THORIUM. 26 Apr 63, 3p. JPRS: 18920.
Order from OTS $0.50 63-21690

Trans. of mono. Toriya i Urana (Thorium and Uranium) Moscow, 1961, p. 218-221.

DESCRIPTORS: *Powder metallurgy, *Thorium, Mechanical properties, Production

Ferrous Metals

Baare, R. D., Boeckers, E. and others.
WAYS OF MINIMIZING OXIDE INCLUSIONS IN LOW-CARBON RIMMING STEELS DURING POURING AND SOLIDIFICATION, PT. 1. Mar/Apr 63, 5900 words.
Order from HB $12.70 HB-5745

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 22, p. 1500-1508.

DESCRIPTORS: *Steel, *Castings, *Oxides, Production.

Bergh, S. and Lindberg, O.
ON THE MICROSCOPIC DETERMINATION OF THE NUMBER AND DISTRIBUTION OF NONMETALLIC INCLUSIONS. Mar/Apr 63, 1500 words.
Order from HB $4.50 HB-5772

Trans. of Jernkontoret [Stockholm]. Annaler (Sweden) 1962, v. 146, no. 11, p. 862-868.

DESCRIPTORS: *Non-metals, Impurities, Determination, Particle size, Distribution, Microscopy, *Inclusions (Metallurgy), Iron, Alloys.

Berve, J. and Gravenhorst, H.
CHANGES IN OXYGEN AND NITROGEN CONTENTS WHEN POURING STEEL IN AIR, IN A CONTROLLED ATMOSPHERE, OR IN VACUUM, PT. 1. Mar/Apr 63, 3900 words.
Order from HB $9.75 HB-5671

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 15, p. 1036-1041.

DESCRIPTORS: *Steel, *Oxygen, *Nitrogen, Air, *Controlled atmosphere, Low-pressure research, Test equipment, Measurement, Metallurgy, *Castings.

Dubinin, E. L. and others.
EFFECT OF ELECTROMAGNETIC FORCES UPON THE ELIMINATION OF NONMETALLIC INCLUSIONS FROM LIQUID STEEL. Mar/Apr 63, 700 words.
Order from HB $2.50 HB-5902

Trans. of #Fizika Metallov i Metallovedenie (USSR) 1962, v. 14, no. 6, p. 935-936.

DESCRIPTORS: *Steel, *Liquid metals, *Electromagnetic properties, Non-metals, Impurities, Metallurgy, *Inclusions (Metallurgy), Separation.

Dubinin, G. N. and Gribovski, L.
RESIDUAL STRESSES IN STEEL SURFACE AFTER METALLIC SURFACE IMPREGNATION. Mar/Apr 63, 1700 words.
Order from HB $4.80 HB-5836

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 11, p. 170-174.

DESCRIPTORS: *Steel, Surface properties, *Surface tension, Impregnation, Phase studies, *Metallography.

Dundrova, V.
TUBULAR STEEL STRUCTURES. Mar 63.
Order from BISI 5 BISI-3100

Trans. of Acta Technica (Hungary) 1961, v. 35/36, p. 555-574.

DESCRIPTORS: *Steel, Structures, *Plasticity, Deformation, *Buckling.

Eberspächer, Heinz.
COLD IMPACT EXTRUSION OF STEEL. [1960] [11]p. 20 refs.
Order from SLA $1.60 62-14523

Trans. of Werkstatt u[nd] Betrieb (West Germany) 1958, v. 91, no. 10, p. 605-608.
Another trans. is available from ATS $11.80 as ATS-75L30G [1959] 10p.

DESCRIPTORS: *Steel, Extrusion, Mechanical working.

For abstract see Technical Translations 3: 318, 1960.

Fellcht, K., Schneider, K., and Stieg, W.
USE OF A SYNTHETIC HOT TOP OF AN EXOTHERMIC MIXTURE OF COKE, K-Na NITRATE AND SAWDUST IN THE CASTING OF STEEL INGOTS. Mar/Apr 63, 4900 words.
Order from HB $11.50 HB-5669

Trans. of Neue Hütte (East Germany) 1962, v. 7, no. 5, p. 299-306.

DESCRIPTORS: *Refractory materials, *Steel, *Casting, Mixture, Coke, Potassium compounds, Sodium compounds, Nitrates, Wood, *Hot working, *Material forming.

Fischer, W. A. and Hoffmann, A.
THE DECOMPOSITION OF WUSTITE IN THE PRESENCE OF METALLIC IRON AFTER QUENCHING TO TEMPERATURES BELOW 570°C. [1959] [14]p. 34 refs.
Order from SLA $1.60 62-14362

Trans. of Archiv [für das] Eisenhüttenwesen (West Germany) 1958, v. 29, no. 2, p. 107-113 (Max-Planck Institut für Eisenforschung (West Germany). Communication-755).

DESCRIPTORS: *Wustite, *Iron, Decomposition, Quenching (Cooling), Electron microscopy, X-ray diffraction analysis.

Graue, G., Lutherath, W., and Marotz, R.
FULLY AUTOMATIC EVALUATION IN THE VACUUM SPECTROMETRIC ANALYSIS OF STEEL. Mar/Apr 63, 2300 words.
Order from HB $6.70 HB-5890

Trans. of Chemie-Ingenieur-Technik (West Germany) 1962 [v. 34] no. 4, p. 309-311.

DESCRIPTORS: *Steel, *Spectrophotometers, Automatic, Design, Spectrographic analysis.

Grabovetskii, A. P.
CORROSION-FATIGUE STRENGTH OF CHROMIUM-PLATED STEEL. Mar/Apr 63, 700 words.
Order from HB $2.60 HB-5904

Trans. of #Metallovedenie i Term[icheskaya] Obrab[otka] Metallov (USSR) 1963, no. 1, p. 21-23.

DESCRIPTORS: *Steel, *Chromium alloys, Chromizing, *Corrosion, *Fatigue (Mechanics), Stresses.

Iodko, E. A.
ELECTRICAL MODEL OF THE THERMAL PROCESSES IN THE CONTINUOUS CASTING OF STEEL. Mar/Apr 63, 3000 words.
Order from HB $8.80 HB-5263

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 6, p. 27-33.

DESCRIPTORS: *Steel, *Casting, *Heat treatment, *Electrical equipment, Models (Simulations), Model tests.

Kocanda, S.
SOME CHARACTERISTICS OF THE DEFORMATION OF HARD CHROMIUM DEPOSITS. Mar/Apr 63, 900 words.
Order from HB $2.70 HB-5922

Trans. of Metalloberfläche (West Germany) 1961, v. 15, no. 3, p. 71-72.

DESCRIPTORS: *Chromium, Deposits, *Deformation, *Steel, Microstructure, Mechanical properties, *Metallography, Load distribution.

Koselev, V. and Burda, S.
ON INTERNAL CRACKS IN (STEEL) FORGINGS, PT. II. Mar/Apr 63, 2700 words.
Order from HB $7.80 HB-5714

Trans. of Hutnik (Czechoslovakia) 1962, v. 12, no. 5, p. 230-234.

DESCRIPTORS: *Steel, *Forging, *Fracture (Mechanics), Mechanical properties.

Linke, A.
INGOT DEFECTS: THEIR CAUSES, AND WAYS OF AVOIDING THEM. Mar/Apr 63, 3200 words.
Order from HB $6.80 HB-5253

Trans. of Metallurgie und Giessereitechnik (Germany) 1952, v. 2, no. 4, p. 109-112.

DESCRIPTORS: *Castings, *Fracture (Mechanics), Impurities, Sources, Metallurgy, *Steel, *Inclusions (Metallurgy).

Logovatoskii, A. A.
INADEQUATE LEVEL OF MECHANIZATION AND AUTOMATION IN METALLURGICAL PLANTS. USSR Industrial Development: Soviet Ferrous Metallurgy no. 115. 29 Apr 63, 14p. JPRS: 18950.
Order from OTS $0.50 63-21702

Trans. of Mekhanizatsiya i Avtomatizatsiya Proizvodstva (USSR) 1962 [v. 16] no. 2, p. 18-21.

DESCRIPTORS: Machines, *Automation, Metallurgy, *Industrial plants, *Iron industry, *Steel industry, Industrial production

Marx, Hans-Jürgen.
PLANNING OF AUTOMATED PRODUCTION UNITS IN STEEL PLANTS. Mar/Apr 63, 4900 words.
Order from HB $12.60 HB-5646

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 11, p. 665-671.

DESCRIPTORS: *Steel industry, Automation, Production, Control systems, *Industrial equipment.

Migai, V. P.
VACUUM TREATMENT OF GRAY CAST IRON. Mar/Apr 63, 500 words.
Order from HB $2.20 HB-5916

Trans. of Liteinoe Proizvodstvo (USSR) 1963, no. 1, p. 25-26.

DESCRIPTORS: *Cast iron, Liquid metals, *Vacuum apparatus, Microstructure, Mechanical properties.

Nesterov, N. A. and Grdina, Yu. V.
POSSIBILITIES OF IMPROVING THE RED HARDNESS OF HIGH-SPEED STEEL. Mar/Apr 63, 2600 words.
Order from HB $7.50 HB-5781

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 10, p. 125-130.

DESCRIPTORS: *Steel, *Tool steel, *Hardness, Carbon, Mechanical properties, Sintering, *Metallography.

Nogtev, N. N. and Ragozin, Yu. M.
ELECTROLYTIC BORONIZING (OF STEEL) IN BORIC OXIDE. Mar/Apr 63, 600 words.
Order from HB $2.50 HB-5903

Trans. of #Metallovedenie i Term[icheskaya] Obrab[otka] Met[allov] (USSR) 1962, no. 12, p. 49-50.

DESCRIPTORS: *Steel, *Electrolysis, *Boron compounds, Oxides, Fused materials.

Popov, V. S. and Lyashchinskii, B. I.
LUMP FERROMANGANESE DISINTEGRATED TO POWDER BY ELECTRIC CURRENT [Droblenie Ferromargantsa Elektricheskim Tokom]. Mar/Apr 63, 1100 words.
Order from HB $3.50 HB-5853

Trans. of Stal' (USSR) 1957, v. 17 [no. 12] p. 1097-1098.

DESCRIPTORS: Solids, *Iron alloys, *Manganese alloys, Powder alloys, *Electric currents, Fracture (Mechanics), *Powder metallurgy.

Rudenko, L. N. and Rostovtsev, S. T.
MECHANISM OF THE LOW-TEMPERATURE REDUCTION OF FERRIC OXIDE. Mar/Apr 63, 3100 words.
Order from HB $8.90 HB-5827

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] [Zavedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 11, p. 5-11.

DESCRIPTORS: *Low temperature research, *Iron compounds, *Oxides, *Reduction (Chemistry), Physical properties, Chemical properties.

Schenck, H., Frohberg, M. G., and Schmitz, K. -G.
CONTRIBUTION TO THE DETERMINATION OF OXYGEN, CHIEFLY IN ALUMINUM-KILLED STEELS. Mar/Apr 63, 3600 words.
Order from HB $8.80 HB-5859

Trans. of Stahl und Eisen (West Germany) 1963, v. 83, no. 3, p. 162-166.

DESCRIPTORS: Determination, *Oxygen, *Aluminum, Vacuum apparatus, *Steel, Metallurgy.

Schepers, A. and Bartholome, W.
BEHAVIOR OF ARTIFICIALLY MADE DEFECTS ON BILLETS OF UNALLOYED STEEL DURING SUBSEQUENT PROCESSING. Mar/Apr 63, 2900 words.
Order from HB $8.30 HB-5721

Trans. of Stahl und Eisen (West Germany) 1962, v. 82, no. 20, p. 1367-1371.

DESCRIPTORS: *Steel, Castings, *Fracture (Mechanics), Mechanical properties, *Metallography.

Shadrunova, A. P.
USE OF THERMOELECTRIC METHOD FOR INVESTIGATING THE PROCESSES TAKING PLACE IN AUSTENITIC STEELS. Mar/Apr 63, 1550 words.
Order from HB $4.50 HB-5779

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 10, p. 107-110.

DESCRIPTORS: *Steel, *Austenite, *Thermoelectricity, Test methods, Corrosion, Analysis, Metallurgy.

Smolyakov, V. F. and Moshkevich, E. I.
PRODUCTION OF QUALITY CASTINGS OF TITANIUM-STABILIZED 18-9 STEEL. Mar/Apr 63, 900 words.
Order from HB $2.80 HB-5914

Trans. of Liteinoe Proizvodstvo (USSR) 1963, no. 2, p. 7-8.

DESCRIPTORS: Production, *Castings, *Steel, *Titanium, Stability, Mechanical properties, Melting.

Svechnikov, V. N. and Golubev, S. S.
ON THE EFFECT OF PHOSPHORUS UPON THE TEMPER BRITTLENESS OF STEEL. Mar/Apr 63, 500 words.
Order from HB $2.20 HB-5871

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 12, p. 117-119.

DESCRIPTORS: *Steel, *Phosphorus, *Brittleness, Mechanical properties, *Metallography.

Yaskevich, A. A. and Samarin, A. M.
EFFECT OF NITROGEN AND BORON UPON THE PROPERTIES OF AUSTENITIC STAINLESS STEEL. Mar/Apr 63, 1800 words.
Order from HB $4.90 HB-5881

Trans. of Izvest[iya] V[ysshikh] U[chebnykh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1962, no. 7, p. 97-102.

DESCRIPTORS: *Austenite, *Stainless steel, Nitrogen, Boron, Additives, Corrosion, *Mechanical properties, *Metallography.

Nonferrous (except light) Metals

USSR INDUSTRIAL DEVELOPMENT: SOVIET NONFERROUS METALLURGY NO. 57. 28 Mar 63 [47]p. JPRS: 18412.
Order from OTS $1.25 63-21445

Trans. of Narodnoe Khozyaistvo Kazakhstana (USSR) 1962 [v. 20] no. 10, p. 9-12, 17-20, 61-63; and from Trud, Moscow (USSR) 1962, 12 Dec; Sovetskaya Estoniya (USSR) 1962, 19 Dec; Kommunist, Erevan (USSR) 1962, 21 Dec; Ekonomicheskaya Gazeta (USSR) 1963, no. 1[74] p. 36 and 46; and an unidentified mono. (brochure) pub. Moscow, 1962 (excerpts).

DESCRIPTORS: *Industrial production, *Metallurgy, Mining engineering, *Copper, Metals, Consumption, Economics, *Molybdenum, Construction, Industrial plants, Labor, *Railroads, Control systems, Railroad tracks, Locomotives, *Springs, Bedding, Conferences, Management engineering, Oxygen, Blowers, Furnaces, Smelting, Aluminum, *Economic geology, Gold, Mica, Piezoelectric crystals, Coal, Iron, Tin, *Diamonds, Logistics, Transportation.

Contents:
Balkhash mining and metallurgical combine plans to increase copper production, by P. Zharnakov and others
Nonferrous metal consumption requires strict controls, by V. Rebrikov

Delayed opening of the Agarak copper-molybdenum combine hinders industry, by A. Shkulev
Modernization of railroads used by Ukrainian metal industry, by M. Tkach
Shortage of box springs hampers bed production, by N. Baranov and N. Churilov
Economic conferences result in higher labor productivity and better operating efficiency, by A. Vdovin
Production and improper planning at the Irtyshakii polymetallic combine, by N. Faizulin
Turgayalumin'stroi continues to lag behind, by V. Gonocharov
Western Yakutiya (economical and geographical characteristics) by G. V. Naumov.

Belyatskaya, I. S. and Livshits, B. G.
EFFECT OF SECONDARY QUENCHING ON THE STRUCTURE AND PROPERTIES OF EI617 ALLOY (Issledovanie Vliyaniya Vtorichnoi Zakalki na Strukturu i Svoistva Splava EI617). Oct 61 [15]p. (foreign text included) 8 refs. NLL M. 3493.
Order from OTS or SLA $1.60 62-23961

Trans. of Izvest[iya] Vys[shikh] Ucheb[nykh] Zaved[enii]. Chernaya Met[allurgiya] (USSR) 1960, no. 7, p. 156-162.

DESCRIPTORS: *Nickel alloys, *Quenching (Cooling), *Phase studies, Grain structures (Metallurgy), Carbides, Mechanical properties, Stresses, Rupture, *Heat resistant alloys.

The role of secondary quenching of alloy EI617 does not appear to consist in the formation of nuclei of the intermetallic strengthening phase. During secondary quenching, a carbide phase of the Ni_nMe_mC type is precipitated along the grain boundaries. The results of stress-rupture tests show that the optimum temperature of secondary quenching of alloy EI617 is $1000^{o}C$. Such treatment results in the formation of a uniformly distributed network of relatively large carbide particles along the grain boundaries. It is possible that the improved properties of the alloy after secondary quenching are partly due to the formation of the K-state being facilitated as a result of transition of carbon from the solution into the carbide phase. (Author)

Structural Metallurgy and Corrosion

Gertsriken, S. D. and Slyusar, B. F.
STUDYING THE DEFECTS IN THE CRYSTALLINE STRUCTURE OF TITANIUM AND OTHER METALS CAUSED BY DEFORMATION. [1962] 6p. 8 refs.
Order from OTS or SLA $1.10 63-10865

Trans. of [Akademiya Nauk URSR, Kiev. Instytut Metallofizyky. Sbornik Nauchnykh Rabot, 1961, v. 12, p. 93-97].

DESCRIPTORS: *Titanium, *Iron, *Copper, Metals, *Crystal structure, *Deformation, Energy, Absorption, Crystal lattice defects.

Savitskii, E. M., Terekhova, V. F., and Naumkin, O. P.
ERBIUM AND ITS ALLOYS (Eribii i Ego Splavy). [1962] 21p. (foreign text included) 11 refs.
Order from OTS or SLA $2.60 AEC-tr-5296

Trans. of #Tsvetnye Metally (USSR) 1960 [v. 33] no. 1, p. 43-48.
Other translations are available from LC or SLA mi$1.80, ph$1.80 as 61-13758, DSIR LLU M. 2276 [1960] 6p. and from MT as MT Trans-101.

DESCRIPTORS: *Erbium, Alloys, Physical properties, Microstructure, Chemical analysis.

(For abstract see Technical translations 5:325, 1961.

Shteinberg, B. S.
CORROSION-RESISTANT PROPERTIES OF CHROMIUM COATINGS OBTAINED FROM THE COLD TETRACHROMATE ELECTROLYTE. (Antikorrozionnye Svoistva Khromovykh Pakrytii Poluchennykh v Kholodnom Tetrakhromatnom Elektrolite). Oct 61 [8]p. (foreign text included) 6 refs. NLL M. 3494.
Order from OTS or SLA $1.10 62-23962

Trans. of #Zhur[nal] Prikl[adnoi] Khim[ii] (USSR) 1961, v. 34, no. 6, p. 1369-1371.

DESCRIPTORS: *Steel, *Corrosion inhibition, Coatings, *Chromium plating, Corrosive gases, Sulfur compounds, Dioxides, Electrolytes, *Chromates, Electrodeposition.

In a moist atmosphere contaminated with sulphur dioxide, chromium coatings on steel, produced in the cold tetrachromate electrolyte, have protective properties which are clearly inferior to those of multilayer protective-decorative coatings of groups S and Zh. The protective properties of "tetrachromate" coatings 30 microns thick on steel are approximately equivalent to those of protective-decorative coatings of group L (10-micron thickness). At a thickness of 40-42 microns, the protective properties of "tetrachromate" coatings on steel are similar to those of milky chromium deposits; at lower thicknesses, the "tetrachromate" coatings are inferior to milky chromium deposits. * (Author)

Voitovich, R. F.
THE OXIDATION OF A WORK-HARDENED AND RECRYSTALLIZED TUNGSTEN-PLATINUM ALLOY (Okislyaemost' Naklepannogo i Rekristallizovannogo Splava Vol'fram-Platina). Oct 61 [6]p. (foreign text included) 5 refs. NLL M. 3501.
Order from OTS or SLA $1.10 62-24778

Trans. of #Metallovedenie i Termicheskaya Obrabotka Metallov (USSR) 1961, no. 7, p. 47-48.

DESCRIPTORS: *Tungsten alloys, *Platinum alloys, Oxidation, Scale, Inhibition, Hardening, Recrystallization.

The effect of work-hardening on high-temperature oxidation of the alloy of tungsten with 1.5% Pt was demonstrated. It was shown that a small addition of platinum sharply reduces the resistance of tungsten to scale formation. (Author)

Zeunert, G.
CHARACTERISTICS AND APPLICATION OF METAL SPRAYING. [1962] 4p.
Order from SLA $1.10 63-10050

Trans. of V[erein] D[eutscher] I[ngenieure. Zeitschrift] (West Germany) 1948, v. 90, no. 11, p. 341-342.

DESCRIPTORS: *Sprays, *Metal coatings, *Corrosion, Metals, Adhesives, Physical properties, Zinc, Tin, Aluminum, Steel, Powders.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

[RESEARCH INTO THE] DIFFUSION OF [FISSION GASES] IN SOLIDS. Quarterly rept. no. 4 (2nd year) (no. 8) 1 Apr-30 June 62, on Contract 064-61-8-RDD. [1962] 6p. EU-B-18.
Order from OTS or SLA $1.10 EURAEC-385

Trans. of a rept. from Hahn-Meitner-Institut für Kernforschung, Berlin (West Germany) n.d.

DESCRIPTORS: *Diffusion, *Fisson products, Gases, Tests, Helium group gases, Xenon, Argon, Potassium compounds, Halides, Thorium compounds, Uranium compounds, Oxides, Carbides, *Fission product activity.

Results are given on studies of activity in the following systems: potassium halide/argon; uranium oxide/xenon; uranium carbide/xenon; and thorium oxide/xenon. (See also 63-15630)

Dejonghe, P.
RESEARCH ON THE TREATMENT OF RADIOACTIVE WASTE AND WATER. Quarterly rept. 7, 1 Oct-61-15 Jan 62, on Contract 048-61-4 RDB. [1962] 35p. CEN R-2084.
Order from OTS or SLA $3.60 EURAEC-275

Trans. of a rept. from Centre d'Étude de'l Énergie Nucléaire, Mol (Belgium) n.d.

DESCRIPTORS: Scientific research, *Radioactive waste, *Disposal, Water, *Radioactive isotopes, Solubility, Soils, *Tracer studies, Geochemistry, Hydrology, Incinerators, Gases, Ash.

Tests were made on the uptake of evaporation and ash concentrates. The possibilities were investigated of using K_3Co^{60} (CN) and Zn^{65} EDTA for average and half-life water tracers. The results with both isotopes are satisfactory. Laboratory and natural experiments were carried out in order to improve the direct detection technique of the radioactive tracers in the soil. The first geological and hydraulic results of the 200 m. deep shaft are furnished. Basic research on the equilibrium of a radioisotope in a three ion macroscopic system has resulted in the drafting of formulae describing the variations of the tracer distribution in relation to the chemical composition of the medium. The chemical analyses and the physico-chemical assays on clay provide a better understanding of the ionic equilibrium, and permit a valuation of the fixing capacities. Combustion tests permitted the determination of the operational conditions as well as an ash valuation in the plant as a whole. An alteration made to the post-combustion chamber reduced the amount of ash entrained by the combustion gases to about 1 kg per 1000 kg of incinerated material.

Federov, G. B. and Smirnov, E. A.
THERMODYNAMIC PROPERTIES OF ZIRCONIUM AND ITS ALLOYS WITH TIN. [1962] 29p. 15 refs.
Order from OTS or SLA $2.60 AEC-tr-5551

Trans. of mono. [International Atomic Energy Agency] Symposium on Thermodynamics of Nuclear Materials, Vienna, 21-25 May 62. [Proceedings] paper SM-26/57.

DESCRIPTORS: *Thermodynamics, Alloys, Zirconium, Tin, *Zirconium alloys, *Vapor pressure, Temperature, Kinetic theory, *Radioactivity, Beta particles.

The temperature dependence of the vapor tension of beta-zirconium and its alloys with tin was investigated. On the basis of the results obtained certain thermodynamic characteristics of zirconium and its alloys with tin were calculated. A differential variant of the Knudsen effusion method together with radioactive indicators was used. The vapor pressure in this method was calculated by the Knudsen-Langmuir formula.

Hahn, Otto and Strassmann, Fritz.
SEPARATE REMOVAL OF THE KRYPTON AND XENON ISOTOPES FORMED BY URANIUM DISINTEGRATION. 26 Feb 62, 10p. 11 refs.
Order from SLA $1.10 63-10089

Trans. of [die] Naturwissenschaften (Germany) [1940] v. 28 [no. 26] p. 455-458.

DESCRIPTORS: *Krypton, *Xenon, *Isotope separation, Uranium, Rubidium, Half life, Material separation, Adsorption, Carbon, Transformations, Radioactive decay.

In-Shen-Kan, Pravednikov, A. N., and Medvedev, S. S.
MECHANISM OF THE PROTECTIVE ACTION OF BENZENE CYCLES DURING POLYSTYRENE RADIOLYSIS. [1962] 5p. 7 refs.
Order from OTS or SLA $1.10 63-10229

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1959, v. 127 [no. 3] p. 595-598.
Another trans. is available from CB $5.00.

DESCRIPTORS: *Polymers, *Styrenes, Decomposition, Radiation effects, Stability, Cyclohexadienes, Disproportionation, *Benzenes, Styrene plastics.

Isagulyants, G. V. and Balandin, A. A.
INVESTIGATION OF THE MECHANISM OF SOME HETEROGENEOUS CATALYTIC PROCESSES USING C^{14}-LABELED COMPOUNDS. [1962] 15p. 17 refs.
Order from OTS or SLA $1.60 AEC-tr-5502

Trans. of mono. [International Atomic Energy Agency] Conference on Radioisotopes in the Physical Sciences and Industry, Copenhagen, 6-17 Sep 60. Proceedings, v. 3, 1962, p. 245-254 (STI/PUB/20).

DESCRIPTORS: *Tracer studies, Carbon, Labeled substances, Chemical reactions, *Reaction kinetics, *Catalysis, Propanols, Decomposition, Vanadium compounds, Oxides, Catalysts, Butanes, Butenes, Dehydrogenation, Ethanol, Dehydration.

An investigation was made of the method of calculating individual phase velocities for parallel, consecutive and (Nuclear Physics and Nuclear Chemistry, TT, v. 9, parallel-consecutive reactions from kinetic data obtained by the use of labeled atoms. The method is used for calculating individual phase velocities in the decomposition reaction of isopropyl alcohol into vanadium trioxides, dehydrogenations of butane-butylene mixtures and dehydrations of ethyl alcohol. Compounds containing C^{14} were used in this study. (Author)

Kazarnovskii, M. V. and Shapiro, F. L.
THEORY OF THE DIFFUSION OF THERMAL NEUTRONS TAKING ACCOUNT OF VELOCITY DISTRIBUTION. [1962] [18]p. 8 refs.
Order from OTS or SLA $1.60 UCRL Trans-687

Trans. of mono. Teoriya Diffuzii Teplovykh Neitronov s Uchetom Raspredeleniya Skorostoi, Moscow, 1960.

DESCRIPTORS: *Thermal neutrons, Neutrons, *Neutron transport theory, Velocity, Distribution, Statistical functions.

This article describes a method of diffusion of thermal neutrons in a heavy medium by expansion of the relation of the distribution function of neutrons to the Maxwellian distribution function M(v) for the entire system of functions which depend on the velocity. Orthogonal polynomials in the interval 0 - ∞ with a weight of M(v) are taken as such functions. In this manner an infinite system of equation is obtained for the coefficients of expansion. In the case of proximity of the neutron spectrum to the Maxwellian spectrum, this system may be discontinued at the first two or three terms (two-group and three-group approximation). As a result of this, the approximate function of the distribution of neutrons may be expressed through several values depending only on the temperature of the moderator. For a heavy monatomic gaseous moderator, these values were calculated theoretically. In the particular case of a pulse source of neutrons in a bounded medium, expressions for the average velocity of neutrons and the constant relaxation of neutron density have been obtained. The case of stationary diffusion at a distance from the sources is also discussed. (Author)

Krupchitskii, P. A., ed.
SOVIET PROGRESS IN NEUTRON PHYSICS. 1963, 269p.
Order from CB $30.00

Trans. of mono. [Neitronnaya Fizika: Sbornik Statei, Moscow, 1961, 371p.].

DESCRIPTORS: Reviews, *Nuclear physics, *Neutrons, Nuclear particles

Ponomareva, L. K. and Zolotavin, V. L.
DETERMINATION OF RADIOACTIVE STRONTIUM IN RESERVOIR WATERS (Opredelenie Radioaktivnogo Strontsiya v Vodakh Otkrytykh Vodoemov), tr. by Ivan Mittin. 1962 [10]p. 5 refs.
Order from OTS or SLA $1.10 63-13872

Trans. of Radiokhimiya (USSR) 1959, v. 1, no. 2, p. 208-211.
Another trans. is available in French from OTS or SLA $1.60 as 62-33254, CEA-tr-R1599.

DESCRIPTORS: *Water supplies, *Radiological contamination, Radioactive isotopes, *Strontium, Determination, Yttrium, Chemical precipitation.

Methods of determination of Sr^{90} in maximum permissible concentrations in waters in open reservoirs were obtained. The total activity of $Sr^{90} + Sr^{89}$ is determined by means of the first method. The time required for the determinations is 2 hours. The maximum error is $\pm$ 10%. The activity of Sr^{90} only is determined by means of the second method. The method provides for the settling of the solution for 24 hours. The maximum amount of error of the determinations is $\pm$ 10%. Both methods make possible the determinations of Sr^{90} in concentrations of 5×10^{-11} curies/l, that is in the order of less than the maximum permissible concentration. (Author)

Roiten', V. A., Stukanovskaya, N. A., and Korneichuk, G. P.
INVESTIGATION BY MEANS OF RADIOACTIVE SULFUR OF THE KINETICS OF THE REACTION $SO_2 + 0.5\ O_2 \rightleftarrows SO_3$ AT THE EQUILIBRIUM POINT ON A PLATINUM CATLYST. [1962] 20p. 6 refs.
Order from OTS or SLA $1.60 AEC-tr-5505

Trans. of mono. [International Atomic Energy Agency] Conference on Radioisotopes in the Physical Sciences and Industry, Copenhagen, 6-17 Sep 60. Proceedings, v. 3, 1962, p. 435-438 (STI/PUB/20).

DESCRIPTORS: *Tracer studies, Sulfur, Radioactive isotopes, Chemical reactions, *Reaction kinetics, Platinum catalysts, *Catalysis, Chemical equilibrium, Sulfur compounds, Dioxides, Oxidation.

An attempt was made to use radioisotopes in the study of the kinetics of heterogeneous catalytic processes in a state of equilibrium. The investigation was carried out by the circulation method. After establishment of equilibrium, a small amount of $S^{35}O_2$ was introduced into the system as a tracer and its conversion rate into $S^{35}O_3$ was measured. From that rate the speed of the direct and inverse processes of oxidation of SO_2 on the catalyst was calculated. Possible sequence patterns for the process are suggested and discussed.

Strutinskii, V. M., Lyashchenko, N. Ya,. Popov, N.A.
SHARP-SURFACE SYMMETRICAL SHAPES OF NUCLEAR EQUILIBRIUM, tr. by Lydia Venters. Oct 62, 40p. 17 refs.
Order from OTS or SLA $3.60 AEC-tr-5493

Trans. of mono. Simmetrichnye Fiqury Ravnovesiya Yadra s Rezkoi Poverkhnost'yu [Moscow] n. d.

DESCRIPTORS: *Fission, Theory, Nuclear energy, Potential theory, Fission product activity, Fission products.

Basic results in calculating the symmetrical shapes of nuclear equilibrium are given. The integral-differential equation for the equilibrium shapes was solved by using the iteration method. (Author)

Yutsis, A. P.
APPLICATION OF THE METHOD OF PARTIAL SEPARATION OF VARIABLES TO TWO EQUIVALENT p-ELECTRONS (Primenenie Metoda Nepolnogo Razdeleniya Peremennykh k Dvum Ekvivalentnym p-Elektronam). Apr 63 [31]p. 4 refs. NASA Technical Trans. F-152.
Order from OTS $1.00 63-11601

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1952, v. 23, no. 4(10) p. 357-370.

DESCRIPTORS: *Quantum mechanics, Atoms, *Nuclear energy, *Electrons, Atomic orbitals, Spherical wave functions, Energy, Helium, Lithium, Beryllium, *Atomic structure, Calculus of variations, *Integrals, Special functions.

A discussion is presented of the radial integrals that express the total energy of the atom in the case of partial separation of the variables after integration with respect to the spin and angular variables. Means of evaluating the kinetic energy integrals and integrals of electrostatic energy of the exchange type are described. Results of calculations for He, Li^{+}, and Be^{++} in the $2p^2$ configuration, obtained by the method of partial separation of variables, are presented in tabular form. (NASA Abstract)

Elementary Particles

Kopylov, G. I.
TABLES OF PHASE VOLUMES (Tablitsy Fazovykh Ovbemoz) tr. by Sergey Shewchuck. Feb 62 [47]p. (foreign text included) 10 refs.
Order from OTS or SLA $4.60 UCRL Trans-798

Trans. of Joint Institute for Nuclear Research (USSR) P-777, 1961, 11p.

DESCRIPTORS: *Elementary particles, Nuclear particles, Production, Pair production, *Nuclear reactions, Statistical mechanics, Volume, *Tables.

Tables are calculated which permit one to compute the statistical weights of the main reactions of multiple production over the whole range of interaction energies by assuming that the covariant statistical theory of multiple formation of particles is valid. The tables are also helpful with the construction of momentum and angular distributions of the reaction products and with calculations of multiple production according to the Chu-Lou scheme. (Author)

Linkin, V. M. and Kolesnikov, N. N.
INTERACTION OF PARTICLES IN NONLINEAR ELECTRODYNAMICS. 11 Feb 63 [17]p. 11 refs. FTD-TT-62-1832.
Order from OTS or SLA $1.60 63-15978

Unedited rough draft trans. of Moscow U. Vestnik. Seriya 3: Fizika, Astronomiya (USSR) 1962 [v. 17] no. 3, p. 17-26.

DESCRIPTORS: *Elementary particles, *Charged particles, *Electromagnetism, Electrostatics, Electric fields, Dipole moments, Special functions, Equations of motion, Vector analysis, Theory.

The interation of particles in the general case of nonlinear electrodynamics is investigated. The interaction of a point particle with an extended particle in nonlinear electrodynamics approximately coincides with the interaction of two particles with extended charges and magnetic moments in the linear theory is shown. (Author)

Lomsadze, Yu. M. and Lend'el, V. I.
ALL-UNION CONFERENCE ON THE THEORY OF ELEMENTARY PARTICLES (Vsesoyuzna Konferentsiya z Teoriyi Elementarnykh Chastok). 26 May 61 [10]p. JPRS: 9354.
Order from OTS or SLA $1.10 61-23472

Trans. from Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1960, v. 5, no. 6.

DESCRIPTORS: *Conferences, *Elementary particles, *Field theory, Nuclear reactions, Pair production, Annihilation reactions

Pomeranchuk, I.
ON THE THEORY OF PRODUCTION OF MANY PARTICLES (K Teorii Obrazovaniya Mnogikh Chastits v Odnom Akte) tr. by Sergey Shewchuck. Apr 62, 11p. (foreign text included) 9 refs.
Order from OTS or SLA $1.60 UCRL Trans-825

Trans. of Akademiya Nauk SSSR. Doklady, 1951, v. 78, no. 5, p. 889-891.

DESCRIPTORS: Theory, *Elementary particles, Production, Nuclear reactions, Pair production, *Nuclear particles, Nucleons, Mesons, Pions, Statistical mechanics.

Instruments and Installations

Antonov, Yu. N., Zinov'ev, L. P. and others.
FOCUSING AND ADJUSTMENT OF THE INJECTOR BEAM OF THE LINEAR ACCELERATOR, tr. by D. A. Nimidoff. Mar 62, 22p. 3 refs.
Order from OTS or SLA $2.60 UCRL Trans-814

Trans. of Joint Inst[itute] for Nuclear Research (USSR) P-855, n.d., 23p.

DESCRIPTORS: *Linear accelerators, Particle accelerators, Synchrotrons, *Particle beams, *Proton beams, *Focusing, Injectors, Ion sources.

The system of focusing and adjustment of the forein-jector beam of the new linear accelerator of the synchrophasotron of the Laboratory of High Energies is described. The distance between the ion source and the inlet pipe of the resonator of the linear accelerator-L = 5000 mm. At this system the focussing system insured the diameter of the beam at the inlet of the accelerator d ≈ 5 mm and the angular divergence $a \geq 3.10^{-3}$ radian at an impulse current of the protons in the beam j - 50 - 70 milliamperes (the duration of the impulse r = 450 mksec, energy of the protons 570 Kev). (Author)

Kazanskii, G. S., Mikhailov, A. I. and others. METHODS OF CHANGING THE DURATION OF THE TIME OF THE BEAM INTERACTION WITH THE TARGET IN A 10 BEV SYNCHROPHASOTRON (Metody Izmeneniya Dlitel'nosti Vzaimodeistviya Puchka s Mishchen'yu v Sinkhrofazotrone na 10 Bev) tr. by D. A. Nimidoff. Mar 62, 41p. (foreign text included) 6 refs.
Order from OTS or SLA $4.60 UCRL Trans-813

Trans. of Joint Inst[itute] for Nuclear Research (USSR) p. 849 [1961] 24p.

DESCRIPTORS: *Synchrotrons, Particle accelerators, *Particle beams, Particle trajectories, *Particle accelerator targets, Time, Phase studies.

The methods of changing the time of the beam interaction with the target are given. These methods are used at the Joint Institute for Nuclear Research synchrophasotron. The regimes which allow several experimental physicists to work in the same acceleration cycle are described. (Author)

Nuclear Engineering

DEVELOPMENT OF CERAMIC FUEL ELEMENTS FOR HIGH TEMPERATURE REACTORS: FABRICATION OF UO_2 AND UO_2-BeO MIXED PELLETS. Quarterly rept. 3, July-Sep 61, on Contract 015-60-9 RDA. [1962]23p.
Order from OTS or SLA $2.60 EURAEC-179

Trans. of a rept. from Battelle-Institut e. V., Frankfurt-am-Main (West Germany) Oct 61.

DESCRIPTORS: *Thermal conductivity, Sinters, Preparation, *Uranium compounds, Oxides, *Beryllium compounds, Pellets, Measurement, *Fuel elements, *Ceramic materials.

The report deals first with the thermal conductivity measuring apparatus, by means of which for the sake of greater accuracy, the conductivity is established absolutely by the radial heat flux method. A description is given of the construction of the apparatus. The report goes on to discuss compacting and sintering tests for the elaboration of fabrication methods for thermal conductivity measurement samples made of UO_2 and UO_2-BeO mixtures. These tests were aimed at producing conditions which resulted in sinters of invariable density, so that the effective influence of BeO additions on the thermal conductivity could be established and other factors, e. g., porosity and crystallite size, excluded. This was achieved by maintaining the sintering conditions constant in the case of UO_2 and all mixtures containing BeO by varying the compacting pressure. In conclusion, the fabrication of samples containing drilled holes 0. 5 mm in diameter to hold insulated thermo-elements is discussed and the pressing tool developed for this purpose described. (Author) (See also EURAEC-116)

DEVELOPMENT PROGRAM ON THE APPLICATION OF STEAM-WATER SPRAY TO REACTOR COOLING. CAN 3: Quarterly rept. 2, 1 Apr-30 June 62, on Contract 056-62-1 RDI. [1962] 16p. CISE Rept. R-61.
Order from OTS or SLA $1.60 EURAEC-332

Trans. of a rept. from Centro Informazioni Studi Esperienze, Milan (Italy) July 62.

DESCRIPTORS: Steam, Water, Sprays, *Reactor coolants, *Nuclear reactors, Power supplies, Design, Heat transfer, Hydrodynamics, Boilers, Construction, Tests, Neutron flux.

Heat transfer and hydrodynamics large scale experiments. Work is in progress in order to modify the existing facility and the associated auxiliaries at Ansaldo, in view of the heat transfer and hydrodynamics experiments foreseen in the present contract. The design of the electrical power supply system to the test elements was mostly completed as well as the design of the flow rate, pressure and electric power measuring system. Preliminary experiments on gas removal from water have been completed. Analytical methods for hydrogen and oxygen determination in water samples are being set up and filters for crud removal are being tested. Fast neutron flux measurements in unperturbed conditions were completed. Experiments were also carried out on radiation streaming along the channel, which led to some modification in the test section design. (Author)

[IMPROVING THE] SINTERING OF URANIUM OXIDE WITH A VIEW TO INCREASING ITS THERMAL CONDUCTIVITY. Quarterly rept. 1 on Contract 004-60-3 RDF. [1962] 13p. 16 refs. Supersedes TID-12479.
Order from OTS or SLA $1.60 EURAEC-5

Trans. of a rept. from Compagnie Générale de Télégraphie sans Fil, Paris (France) 29 June 60.

DESCRIPTORS: *Uranium compounds, *Oxides, *Sintering, *Thermal conductivity, Pellets, Alkaline earths, Physical properties, Chemical properties, Measurement, Reactor fuels.

Contents:
Properties of adjuvant oxides
Properties of uranium oxide and its sintering, using the adjuvants advocated
Measurement of the thermal conductivity of uranium oxide

PRODUCTION OF BLENDED OXIDE PELLETS (UO2-ThO2) BY SINTERING IN AIR. Quarterly rept. 3 on Contract EUR/C/1356/60/f. [1962] 32p.
Order from OTS or SLA $3.60 EURAEC-115

Trans. of a rept. from Compagnie Industrielle des Combustibles Atomiques Frittés, Paris (France) n.d.

DESCRIPTORS: Production, *Oxides, Pellets, *Sintering, *Uranium compounds, *Thorium compounds, Air, Hydrogen, Thermal conductivity, Gases, Furnaces, Reactor fuel rods.

The sintering in air of UO3-ThO2 mixtures as made it possible to obtain blends with a density exceeding 98% of the theoretical density. These results have been obtained both on pellets shaped by pressing and on extruded rods. Sintering U308-ThO2 mixtures gives definitely inferior results, both in air and in hydrogen. A trial sintering in a gas-heated industrial furnace has been carried out successfully. Continuation of the gravimetric tests for determining the O/U ratio, as well as the examination by diffraction of X-rays, have confirmed the non-stoichiometry of blends sintered in air. Micrographical examination of a series of pellets has shown the importance of the density "crude" on the structure of the sintered products. Examination of pellets sintered for 500 hours in hydrogen, at 1650°, has enabled some interesting observations to be made. (Author)

Himmelstein, P., Liebmann, B., and Schäfer, L.
DEVELOPMENT OF UC-BASED URANIUM CARBIDE AND CERMET FABRICATION PROCESSES. Quarterly rept. 6, 1 Oct-31 Dec 61, on Contract EUR/C/659/62 e. [1962] 10p.
Order from OTS or SLA $1.10 EURAEC-232

Trans. of a rept. from Nuklear-Chemie und -Metallurgie G. m. b. H/. Wolfgang bei Hanau am Main (West Germany) n.d.

DESCRIPTORS: *Fuel rods, *Uranium compounds, *Carbides, *Cermets, Production, Carbon, Chemical analysis, Particles, Pellets, Chemical reactions, Molding materials, Graphite, Smelting, Furnaces, Casting, Extrusion, Mechanical properties

It was shown that UC samples for use in carbon analysis must be comminuted under dried protective gas, since the C- values obtained by mortar-grinding in air are too low. Tests were carried out to determine the homogeneity of UO_2-C mixtures used as source material for UC fabrication. If all the 0,09mm grains in the UO_2 are removed by sieving, lower variations in the C-content of the UO_2-C mixtures are obtained than when coarse grains are present. Tests on the reaction $UO_2 + 3C \rightarrow UC + 2CO$ showed that UC fabricated at 1,700°C by means of this reaction reacts again with CO at 1,000°C forming 5% UO_2 + carbon. Approximately 44kg UC rods were centrifugally cast in a skull-melting furnace. The surface of the rods was improved by the use of a fine-grained graphite as the mould material. Grinding tests carried out on UC rods and pellets showed that the rods were considerably tougher than the pellets. UC rods were also fabricated by extruding and then reacting a UO_2 + C mixture. Systematic tests aimed at determining the properties of cast UC rods were begun. (Extract) (See also 62-32176)

Kovanits, Pavel.
TO THE CONDITIONS OF USING TRANSFER FUNCTIONS OF THE REACTOR (K Usloviyam Primeneniya Peredatochnykh Funktsii Reaktora) tr. by Lydia Venters. Oct 62, 9p. 5 refs.
Order from OTS or SLA $1.10 AEC-tr-5420

Trans. of #Atomnaya Energiya (USSR) 1962, v. 12 [no. 2] p. 123-128.

DESCRIPTORS: Nuclear reactors, *Reactor reactivity, *Reactor control, Reactor kinetics, *Functions.

The equivalent complex amplification factor of the reactor may be determined when the law concerning either the variation of the input value or that of the output value, is preset. The results obtained may be used in the program regulation of the period and power of the reactor; they allow one to determine the conditions for using the elementary transfer functions of the reactor, and to evaluate the errors associated with this. New formulae for approximating the transfer function of the subcritical, critical and supercritical reactors are worked out. (Author)

Richter, H., Tverberg, J. C. and others.
INVESTIGATION [ON ALLOYS OF ZIRCONIUM] WITH NIOBIUM AND TIN WITH RESPECT TO THEIR USE AS CLADDING MATERIAL IN WATERCOOLED NUCLEAR REACTORS. Quarterly rept. [7] 3 (2d year), 1 Oct-31 Dec 61, on Contract 047-61-4 RDA. [1962] 65p. 14 refs.
Order from OTS or SLA $6.60 EURAEC-243

Trans. of a rept. (E-2348) from Metallgesellschaft A.G., Frankfurt am Main (West Germany) 22 Jan 62.

DESCRIPTORS: *Zirconium alloys, *Niobium alloys, *Tin alloys, Fuel cladding, *Nuclear reactors, Corrosion, Tests, Hydrogen, Cold-working, Creep, Welding, Solubility, Light water reactors, *Reactor fuel cladding, *Reactor materials.

Investigation of the zirconium rich corner of the system ZrNbSn determined that the solubility of tin in zirconium is not substantially influenced by niobium additions up to 10%. In the temperature range of 575 to 750°C at least 2% tin is dissolved. Texture investigations on extruded tubes of the alloy ZrNb3Sn1 resulted in a fiber texture with the 1010 plane parallel with the tube axis. Scattering about an ideal position became less with increased extrusion ratio. On the basis of the corrosion behavior of various heat treated samples the final anneal temperature was fixed at 580 ± 10°C. The investigation on the influence of hydrogen on the structure of ZrNb and ZrNbSn alloys showed that hydrogen stabilized the β-Zr-phase in ZrNb alloys and lowered the transformation temperature. A hydrogen content of 0.1% lead to a decrease in the creep rate in the alloy ZrNb3Sn1 and Zircaloy-2 and to an increase in the creep rate of the alloy ZrNb2. Testing the weldjoints of the alloy ZrNb3Sn1 indicated that an elongation of ~10% with the strength of the base material can be attained. After a heat treatment the corrosion resistance as well as the mechanical properties of the base material can be attained. (Author)

Speeckaert, Ph. and others.
REPROCESSING OF IRRADIATED FUELS. Quarterly rept. 4 (2d year) Jan-Mar 62, on Contract 049-61-4 RDB. [1962] 42p. 15 refs.
Order from OTS or SLA $4.60 EURAEC-337

Trans. of a rept. from Centre d'Étude de l'Énergie Nucléaire, Mol (Belgium) n.d.

DESCRIPTORS: Reactor fuels, *Uranium compounds, *Zirconium compounds, *Niobium compounds, Oxides, Chlorides, Alkaline earths, Fluorides, Corrosion, Reaction kinetics, Transformations, Chemical reactions, *Reactor fuel processing.

Chloridization of uranium, zirconium and niobium oxides by CC14 entrained by CO_2 enables the corresponding chlorides to be obtained rapidly and quantitatively, without the formation of a carbon deposit. The use of CO to reduce U_3O_8 avoids the release of humidity which is detrimental to chloridization operations. A comparative study of reduction by H_2 and by CO has been made. The use of the latter enables the reduction time and temperature to be reduced. Various chloridization tests, in the presence of alkaline and alkaline-earth chlorides, have been carried out with a view to improving the separation of uranium and fission products. Transformation of UCl_{5-6} and UCl_3 into fluorides, under the action of HF and SF_4 has been studied. Under the experimental conditions used, formation of UF_6 and UF_3 was not observed. The results obtained indicate that UF_5 and UF_4 are the products of the reactions with UCl_{5-6} and UC14 respectively. A thermogravimetrical study, on the rate of hydrofluoridization of UO_2 re-oxidized on the surface and then reduced again, has been carried out. An appreciable increase in the hydrofluoridization rate was observed. The activation energy of this reaction attains about 8.7 kcal. Studies on uranium carbide hydrofluoridization have confirmed the existence of two concurrent actions in the presence of both gaseous and liquid HF. (Author)

PHYSICS

Filipovich, V. N.
CONTRIBUTION TO THE THEORY OF THE SCATTERING OF X-RAYS IN GASES, LIQUIDS, AMORPHOUS SOLIDS AND POLYCRYSTALLITES, PT. I (K Teorii Rasseyaniya Rentgenovskikh Luchei v Gazakh, Zhidkostyakh, Amorfnykh Tverdykh Telakh, Polikristallakh, I) tr. by G. N. Gibson. July 60 [16]p. 8 refs. DSIR Library Communication no. 989, pt. 1; NLL M.4646(I).
Order from OTS or SLA $1.60 62-23710

Partial trans. (p. 1603-1621) of Zhurnal Tekhnicheskoi Fiziki (USSR) 1955, v. 25, no. 9, p. 1603-1638.

DESCRIPTORS: *X-rays, Scattering, *Fourier analysis, Gases, Liquids, Glass, Crystals.

A new, general and strict deduction of formulae is obtained from a Fourier analysis of x-ray patterns of macroscopically isotropic substances with and without the use of atomic factors. The physical significance of the results obtained by Fourier analysis is made precise. (Author)

Vegard, L.
ELECTRICAL ABSORPTION IN DISCHARGE TUBES. [3 July 62] 30p. 28 refs.
Order from SLA $2.60 63-10088

Trans. of Annalen der Physik (Germany) 1916 [ser. 4] v. 50, p. 769-795.

DESCRIPTORS: *Discharge tubes, Gas discharges, Electric discharges, *Absorption, Magnetic fields, Experimental data, Hydrogen, Oxygen, Helium, Ions.

Acoustics

Kazarinov, R. F. and Skobov, V. G.
ON THE POSSIBILITY OF ULTRASONIC AMPLIFICATION IN SEMIMETALS. [1962] 4p. 2 refs.
Order from OTS or SLA $1.10 62-18843

Trans. of #Zhur[nal] Eksp[erimental'noi i] Teoret[icheskoi] Fiz[iki] (USSR) 1962, v. 42, no. 3, p. 910-912.

DESCRIPTORS: *Ultrasonic radiation, *Amplifiers, *Bismuth, Crystals, *Phonons, Magnetic fields, Sound transmission.

Ladefroux, I.
LABORATORY MEASUREMENTS OF THE VELOCITY OF SOUND IN THE CONSOLIDATED SEDIMENTARY ROCKS. [1962] [26]p. 4 refs.
Order from SLA $2.60 63-10222

Trans. of Revue [de l']Institut Francais du Pétrole [et Annales des Combustibles Liquides] 1961, v. 16 [no. 4] p. 367-381.

DESCRIPTORS: *Sound, *Velocity, *Sedimentary rock, Geophysics, Temperature, Pressure, Porosity, Measurement, *Laboratory equipment, Design.

Electricity and Magnetism

Akashi, Goro and Kitamoto, Tatsuji.
MAGNETIC RECORDING POWDER MANUFACTURING METHOD. [1962] 4p. (figs. tables omitted).
Order from OTS or SLA $1.10 62-20406

Trans. of published Japanese patent 62-11520, 20 Aug 62, appl. no. 60-48846, 17 Dec 60, by Fuji Photographic Film Co.

DESCRIPTORS: *Powders, *Magnetic tape, *Magnetic materials, Magnetic recording systems, Iron compounds, Cobalt, Oxides, Iron alloys, Magnetic fields, *Manufacturing methods.

A magnetic recording powder manufacturing method is described. An iron compound containing, among other metals, more than 0.5% cobalt in atomic ratio is reduced in a magnetic field, at a temperature below 700° C under reducing gas to obtain iron alloy particles. The maximum dimension of the particles never exceeds 10 μ. (Author)

Ginzburg, V. L.
BEHAVIOR OF SUPERCONDUCTING FILMS IN A MAGNETIC FIELD [O Povedenii Sverkhprovodyashchikh Plenok v Magnitnom Pole]. [1962] 9p. 5 refs.
Order from OTS or SLA $1.10 63-10773

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1952, v. 83, no. 3, p. 385-388.
Another trans. is available from SLA as RT-473, 7p.

DESCRIPTORS: *Magnetic fields, *Superconductivity, *Films, Phase studies, Hysteresis.

Miyata, Akira and Yamaura, Ryozo.
MAGNETIC POWDER MANUFACTURING METHOD. [1962] 6p. (figs. tables omitted).
Order from OTS or SLA $1.10 62-20412

Trans. of published Japanese patent 62-9126, 24 July 62, appl. no. 60-23772, 12 May 60, by Broadcasting Corp. of Japan.

DESCRIPTORS: *Powders, *Magnetic tape, *Magnetic materials, Cobalt compounds, Iron compounds, Oxidizers, Hydroxides, *Manufacturing methods.

Magnetic powder manufacturing method characterized in that from 10 to 0.5 (mol)% soluble cobalt salt is added and mixed in ferrous salt to dissolve them in water, and proper amounts of nitrate or other oxidizers and alkali are added to said aqueous solution, which is then heated at 50° to 100°C and is oxidized through a wet process to obtain the magnetic powder thereby. (Author)

Rother, H.
MAGNETIC PROPERTIES OF FERROMAGNETIC LAYERS. I. STOCHASTIC THEORY OF THE FINE STURCTURE OF MAGNETIZATION [1962] 18p. 7 refs.
Order from SLA $1.60 62-20227

Trans. of Zeit[schrift für] Physik (West Germany) 1962, v. 168, p. 42-54.

DESCRIPTORS: *Ferromagnetic materials, *Thin films, Films, *Magnetic properties, Crystal structure, Magnetic fields, Magnetic effects, Electron microscopy, Theory, Anisotropy, Line spectrum.

The path of the direction of magnetization in polycrystalline ferromagnetic thin layers with nondisappearing magnetic crystal-anisotropy is calculated. In the case of randomly distributed crystal axes of the crystallites a wave pattern is obtained for the direction of magnetization. Wavelength spectrum and amplitude of the deviations from the gross direction are calculated for linear crystallite chains and approximated for planar layers. The wavelength spectrum is solely determined by the diameter of the crystallites. The mean angular amplitude Ω of the waves is essentially proportional to the anisotropy of the crystal (or magnetostriction resp.) and proportional to the square of the crystallite diameter; it disappears in the case of thick layers and strong external magnetic fields, when $H \gg 2A/J_s\lambda^2$ (λ = wavelength). (Author)

Rother, H.
MAGNETIC PROPERTIES OF FERROMAGNETIC LAYERS. II. THEORY OF DOMAIN SPLITTING. [1962] 10p. 9 refs.
Order from SLA $1.10 62-20231

Trans. of Zeit[schrift für] Physik (West Germany) 1962, v. 168, p. 148-154.

DESCRIPTORS: *Ferromagnetic materials, *Thin films, *Magnetic properties, Surface properties, Hysteresis, Magnetic effects, Electron microscopy, Theory, Crystal structure, Anisotropy.

The anomalous domain splitting in thin layers with uniaxial anisotropy of the magnetization in the hard direction is caused by the wave structure of the magnetization, characteristic for all thin layers. The wall energy at the formation of such domains is strongly reduced by suitable embedding of the walls within the wave-shaped course of the magnetization. A coercive force, due to the waves, retains the walls in their original position, as a frozen state of nonequilibrium even after the field has been turned off. The width calculated for the domains is in agreement with the experimental results. (Author)

Rother, H.
MAGNETIC PROPERTIES OF FERROMAGNETIC LAYERS. III. "WAVE THEORY" OF THE COERCIVE FORCE. [1962] 14p. 16 refs.
Order from SLA $1.60 62-20230

Trans. of Zeit[schrift für] Physik (West Germany) 1962, v. 168, p. 283-291.

DESCRIPTORS: *Ferromagnetic materials, *Thin films, Films, *Magnetic properties, Creep, Crystal structure, Rotation, Energy, Magnetic effects, Magnetic fields, Theory, Anisotropy.

The wave structure of the magnetization, generally occuring in thin layers, causes a coercive force which in this case is considerably larger than within compact material. Its dependence upon crystal anisotropy, uniaxial anisotropy, diameter of the crystallites, and thickness of the layer is calculated. For Ni-Fe layers these calculations agree with the experimental data, indicating that within thin layers (at least in Ni-Fe layers) the coercive force due to the wave structure plays the predominant role while the usual factors which lead to a coercive force (dislocations, impurities, coarseness) here only contribute to the coercive force by means of influencing the amplitude of the magnetization waves. (Author)

Snoek, J. L.
TIME-DEPENDENT PHENOMENA UNDER THE INFLUENCE OF MECHANICAL AND MAGNETIC FORCES IN MATERIALS CONTAINING IRON. 18 Nov 47, 9p. (figs. formulae omitted).
Order from SLA $1.10 62-20359

Trans. of Schweizer Arch[iv für Angewandte Wissenschaft und Technik] 1947, v. 13, no. 1, p. 9-14.

DESCRIPTORS: *Ferromagnetic materials, Ferrites, Relaxation time, *Iron, Magnetic properties, Elasticity.

Voigt, Friedrich.
THE INFLUENCE OF THE ADDITION OF COBALT ON THE FREQUENCY DEPENDENCE OF THE COMPLEX PERMEABILITY OF Ni Zn - FERRITE. [1962] 11p. 7 refs.
Order from SLA $1.60 62-20387

Trans. of Zeit[schrift] f[ür] Angew[andte] Physik (West Germany) 1961, v. 13, no. 11, p. 538-541.

DESCRIPTORS: *Cobalt, *Permeability (Magnetic), Frequency, *Nickel compounds, *Zinc compounds, *Ferrites, Anisotropy, Hysteresis, *Ferromagnetism.

Völcker, E.
A PIEZO-ELECTRIC MEASUREMENT DEVICE FOR THE DETERMINATION OF ACCELERATIONS OF SHORT DURATION. [1962] 9p. (figs. [refs.] omitted).
Order from SLA $1.10 63-10028

Trans. of Frequenz (Germany) 1949, v. 3 [no. 8] p. 244-249.

DESCRIPTORS: *Piezoelectric gages, *Meters, *Acceleration, Damping, Oscillation, Resonance.

An acceleration - and pressure-measuring device is described which operates according to the piezo-electric principle. An experimental investigation is carried out of the resonant frequency and degree of damping of the oscillating system. Proof is furnished that the apparatus may be adjusted to a degree of damping which is optimal for the recording of oscillation. (Author)

Molecular Physics and Spectroscopy

Becker, E. W., Klingelhöfer, R., and Lohse, P.
BEAMS OF CONDENSED HELIUM IN HIGH VACUUM. [1962] 3p. 3 refs.
Order from SLA $1.10 63-10350

Trans. of Z[eitschrift] für Naturforschung (West Germany) 1961, v. 16a, p. 1259.

DESCRIPTORS: *Helium, Vacuum apparatus, Low pressure research, *Condensation reactions, *Particle beams.

Belyanin, V. B.
MULTIPLE SPLITTING OF THE GRAND LEVEL OF THE HOLMIUM ATOM. 27 Dec 57, 4p. 5 refs.
Order from OTS or SLA $1.10 AEC-tr-5321

Trans. of Optika i Spektroskopiya (USSR) 1958, v. 5, no. 3, p. 236-237.
Another trans. is available from OTS $0.50 as 59-21085, NRL Trans-702, 12 June 59 [8]p.

DESCRIPTORS: Rare earth elements, *Holmium, Atoms, Atomic structure, *Hyperfine structure, Line spectrum, Atomic orbitals, Atomic energy levels.

The measurement of the hyperfine structure of the spectral lines of holmium-I together with the method of constant differences is used in the attempt to determine the splitting of the ground state of holmium atom.

Molin, Yu. N., Chkheidze, I. I. and others.
AN INVESTIGATION OF THE PROCESSES OF ENERG TRANSFER IN THE RADIOLYSIS OF SOME FROZEN HYDROCARBONS BY THE ELECTRON PARAMAGNETIC RESONANCE METHOD. [1962] [6]p. 11 refs.
Order from OTS or SLA $1.10 63-15130

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 131, no. 1, p. 125-128.

DESCRIPTORS: Energy, *Radiolysis, *Hydrocarbons, *Paramagnetic resonance, Freezing, Kinetic theory, Chemical bonds.

Osherovich, A. L. and Savich, I. G.
ON THE MEASUREMENT OF LIFETIMES OF THE LEVELS 3^3P AND 3^1P OF HELLIUM ATOMS BY THE METHOD OF DELAYED COINCIDENCES [Ob Izmerenii Vremeni Zhizni Urovnei 3^3P i 3^1P Atomov Geliya Metodom Zaderzhannykh Sovpadenii] tr. by Sergey Shewchuck. Dec 61 [8]p. 11 refs.
Order from OTS or SLA $1.10 UCRL Trans-767 (L

Trans. of Optika i Spektroskopiya (USSR) 1958, v. 4 [no. 6] p. 715-718.

DESCRIPTORS: *Helium, Atoms, *Atomic energy levels, Excitation, *Coincidence counting.

The use of the method of delayed coincidences is described for the measurement of the lifetime of excited atoms. The results of measuring by this method the lifetime of the levels 3^3P and 3^1P of helium atoms are presented. For the level 3^3P this quantity turned out to be equal to $(1.00 \pm 0.08)\ 10^{-7}$ sec. (Author)

Pahl, M. and Weimer, U.
MASS SPECTROMETRIC IDENTIFICATION OF THE MOLECULAR ION $(HeNe)^+$ IN THE POSITIVE COLUMN [Massenspektrometrische Untersuchungen über die Bildung von $(HeNe)^+$ in der Positiven Saule]. 19 May 61, 2p. 8 refs.
Order from SLA $1.10 63-10358

Trans. of [die] Naturwissenschaften (West Germany) 1957, v. 44 [no. 18] p. 487.

DESCRIPTORS: *Helium, *Neon, Ions, *Mass spectroscopy.

For abstract see Technical Translations 5: 641, 1961.

Schaefer, Cl., Matossi, F., and Wirtz, K.
THE INFRARED REFLECTION SPECTRUM OF SILICATES. [1962] 36p. 30 refs.
Order from SLA $3.60 63-10163

Trans. of Zeitschrift für Physik (Germany) 1934, v. 8 p. 210-233.

DESCRIPTORS: *Infrared spectroscopy, *Silicates, Crystal structure, Reflection, Frequency.

The data on reflection measurements in the infrared spectra of silicates are presented. Two regularly occurring reflection bands between 8 and 12 and 17 and 20 can be correlated with the polymerizations of the

SiO_4 groups. A 'middle band' between 14 and 18 , which appears in particular in silicates can be attributed to other coordination polyhedra (A O_6, BeO_4). The short-wave band between 8 and 12 which is attributed to the SiO_4 group shows displacement toward shorter wavelengths with increasing degree of linking of the SiO_4 tetrahedra. In the structures containing ring formations (quartz, beryl and apophyllite), a new reflection appears at 12.5 , which possibly can be ascribed to the activated inactive eigenfrequency (pulsation). The arrangements of the four frequencies taken as the basic vibrations of the tetrahedral structure of the SiO_4 group are discussed with reference to the data of Weiler. It is shown that besides the Weiler assignment there is a second possibility, which according to the present data on XY_4 tetrahedra is considered more probable. (Author)

Veits, I. V. and Gurvich, L. V.
ON THE BASIC ELECTRON STATE OF OXIDES OF MOLECULES OF GROUP II ELEMENTS (Ob Osnovnykh Elektronnykh Sostoyaniyakh Molekul Okislov Elementov II Gruppy) tr. by D. A. Nimidoff. Aug 61, 14p. 10 refs.
Order from OTS or SLA $1.60 UCRL Trans-707

Trans. of [Optika i Spektroskopiya] (USSR) 1957, v. 2, no. 2, p. 145-149.
Another trans. is available from OTS or SLA $1.60 as 62-16714 [1962] 11p.

DESCRIPTORS: *Alkaline earth oxides, Dissociation, *Electron optics, Atomic energy levels, Group II elements, Molecular spectroscopy.

As a result of the study of the relation of the logarithm of the dissociation equilibrium constant of C_aO and S_rO with the temperature in the interval 2300 - 3200 K the dissociation energies of the molecules are determined. On the basis of comparison of magnitudes thus found and by the equation $D_o = T(\Delta' - R L_n K_p)$ a deduction was made that the state of the molecules of both oxides must be ... - state. It was shown that this supposition is not contrary to the rules of correlation of the basic conditions of the corresponding molecules correlate with the excited ^3P-condition of the metal atom and the potential curves of the triplet conditions formed by the basic conditions of the atoms of the metal and oxygen $^1S(Me)+^3P(O)$, are curves of the repulsion type. (Author)

Optics

Björnstahl, Y.
RESEARCHES ON ANISTROPIC LIQUIDS. [1962] 60p. 51 refs.
Order from SLA $5.60 63-10165

Trans. of Annalen der Physik (Germany) 1918, ser. 4, v. 56, no. 11, p. 161-207.

DESCRIPTORS: *Liquids, *Anisotropy, *Optical properties, Electric fields, Electrical effects, Electrophoresis, Temperature, Refraction, Light.

Contents:
I. Light extinction in anistropic liquids
II. On the influence of an electric field.

Tul'chinskii, B. S. and Yurasov, V. D.
APPAREIL POUR LA PREPARATION DES SUBSTANCES EN POUDRE POUR LES RECHERCHES PAR MICROSCOPIE ÉLECTRONIQUE, tr. by Giuliana. 28 Apr 62 [7]p. CEA Trans. no. R 1629 (text in French).
Order from OTS or SLA $1.10 62-33728

Trans. in French of Russian author's certificate no. 132,734 [cl. 21g 3710] appl. 25 Jan 60, no. 652159/26 (pub. in #Byulleten' Izobretenii (USSR) 1960, no. 20).

DESCRIPTORS: Laboratory equipment, *Electron microscopy, Particles, Particle size, Electrodes, *Powders, Electromagnetic fields, Optical equipment.

Solid State Physics

Fleischmann, H.
THERMAL CONDUCTIVITY, THERMOELECTRIC FORCE AND ELECTRIC CONDUCTIVITY OF SEMICONDUCTING SOLID SOLUTIONS OF THE FORM $(A^{I}_{x/2}B^{IV}_{1-x}C^{V}_{x/2})D^{VI}$. [Dissertation, Marburg, 1961]. [1962] 15p. (figs. refs. omitted).
Order from SLA $1.60 63-10265

Trans. of Z[eitschrift fŭr] Naturforsch[ung] (West Germany) 1961, v. 16a [no. 8] p. 765-780.
Another trans. is available from SLA $3.60 as 62-14440 [1962] 34p.

DESCRIPTORS: *Semiconductors, *Electrical conductance, *Thermal conductivity, Thermoelectricity, Hall effect, Zone melting, Silver, Lead, Antimony, Tellurium, Bismuth, Solids, Liquids, Solutions.

Grüneisen, E. and Gielessen, J.
INVESTIGATIONS ON BISMUTH CRYSTALS. I. THERMAL AND ELECTRIC CONDUCTIVITY IN TRANSVERSAL MAGNETIC FIELDS. [1962] 18p. 17 refs.
Order from SLA $1.60 63-10739

Trans. of Annalen der Physik (Germany) 1936 [ser. 5] v. 26, p. 449-464.

DESCRIPTORS: *Bismuth, *Crystals, Heat transfer, Electrical conductance, Electric fields, Magnetic fields, Crystal lattices, Conductivity, Resistance, Rotation, Crystal growth, *Metallic crystals, *Thermoelectricity.

Thermal and electrical conductivity of 4 Bi-crystal rods of different orientation were measured at -183 and -195° C in transversal magnetic fields of 650 to 6100 Oe. The field direction was thereby rotated within the plane perpendicular to the rod by a total of 360° arc in 30 increments. Within a given field direction the T. C. (thermal conductivity) decreases as the field strength increases, more slowly at higher fields and presumably approaches a limit which lies 20% to 30% below the field-free value while the electric conductivity E. C. drops to a small fraction. The T. C. fluctuates in the same fashion as the E. C. when the field is rotated by 360°. These T. C. fluctuations amount to several percent. In

contrast to the E. C. fluctuations they can by no means be described by a Fourier series with $360^{o}/2n$ periods, they contain rather periods of $360^{o}/(2n + 1)$ also (where n = 0, 1, 2, 3...). The latter becomes relatively more pronounced the higher the field strength is. The T. C. is generally not an unequivocal function of the E. C. at higher fields. On averaging over all field directions, however, an almost linear relationship between T. C. and E. C. becomes clearly apparent. (Author)

Grüneisen, E. and Gielessen, J.
INVESTIGATIONS ON BISMUTH CRYSTALS. II. CHANGE OF THE THERMOELECTRIC POWER IN TRANSVERSAL MAGNETIC FIELDS. [1962] 14p. 12 refs.
Order from SLA $1.60 63-10740

Trans. of Annalen der Physik (Germany) 1936 [ser. 5] v. 27, p. 243-255.

DISCRIPTORS: *Bismuth, *Crystals, *Thermoelectricty, Power, Magnetic fields, Rotation, Resistance, *Metallic crystals.

Herglotz, H. K.
SEMI-QUANTITATIVE ESTIMATION OF THE PERFECTION OF SINGLE SILICON CRYSTALS. [1962] 7p. 6 refs.
Order from SLA $1.10 63-10161

Trans. of Acta Physica Austriaca, 1962, v. 15, no. 1/2, p. 57-63.

DESCRIPTORS: Quantitative anlaysis, *Silicon, Crystals, *Single crystals, Crystal structure.

Counting etching pits and a previously reported X-ray method /1/ were compared in relation to the ability to characterize the perfection of single silicon crystals. The effect of crystal perfection on the life of minority carriers in single silicon crystals was also determined and agreement with earlier measurements, obtained in a different way, was observed. (Author)

Hilsch, P. and Hilsch, R.
ON THE BEHAVIOR OF SUPERCONDUCTORS IN CONTACT WITH NORMAL CONDUCTORS. [1962] 5p. 4 refs.
Order from SLA $1.10 62-20188

Trans. of die Naturwissenschaften (West Germany) 1961, v. 48, no. 16, p. 549.

DESCRIPTORS: *Superconductors, Conductors, Transition temperature, Metal films, Silver, Copper, Lead, Tin.

Kardonskii, V. M.
X-RAY TOPOGRAPHIC CRYSTAL PHOTOGRAPHY. [1962] 2p.
Order from OTS or SLA $1.10 63-13596

Summary trans. of #Kristallografiya (USSR) 1962, v. 7, no. 2, p. 313-315.

DESCRIPTORS: *Crystals, *X-ray photography, Resolution.

An improved method for the x-ray photography of crystals, with a resolving power better than that attainable by the methods of Lang (Lang, A. R., Acta metallurgica, v. 5, 1957, 358) and Newkirk (Newkirk, J. B., Trans. A.I.M.E., v. 3, 1959, 483), is described. The new method is little affected by the geometry of the optical system and uses standard equipment. (Author)

Klassen-Neklyudova, M. V. and Urusovskaya, A. A.
EFFECT OF THE HETEROGENEOUS STRESS ON THE MECHANISM OF PLASTIC DEFORMATION OF THALLIUM AND CESIUM HALIDES (Vliyanie Neodnorodnogo Napryazhennogo Sestoyaniya na Mekhanizm Plasticheskoi Deformatsii Galogenidov Talliya i Tseziya) tr. by M. Kassatkin. June 62 [31]p. (foreign text included) 16 refs.
Order from OTS or SLA $3.60 UCRL Trans-83

Trans. of Kristallografiya (USSR) 1956, v. 1, p. 410-418.

DESCRIPTORS: *Thallium compounds, *Cesium compounds, *Halides, *Single crystals, Plasticity, *Deformation, *Stresses, Compressive properties, Crystals, Crystal structure.

It is shown in this paper that the formation of reoriented regions (kinks) in single crystals is possible only in such cases when the deformation of compression and tension is accompanied by the appearance of macrobending moments. Apart from a complex stressed state, it is necessary for the formation of kinks that the glide plane and glide direction should be oriented in relation to the deformation axis in such a way as to hinder the deformation of gliding. (Author)

Nikol'skii, V. G., and Buben, N. Ya.
RADIOTHERMOLUMINESCENCE IN ORGANIC COMPOUNDS. [1962] [6]p. 19 refs.
Order from OTS or SLA $1.10 63-13587

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 134, no. 1, p. 134-136.

DESCRIPTORS: *Organic compounds, *Radiation effect, *Luminescence, Heat, Ethylenes, Phase transitions, Crystal structure, Fluorescence.

Spielmann, Werner and Ziegler, Günther.
DENDRITE GROWTH IN DIAMOND LATTICES. [1962] 4p. (figs. omitted) 5 refs.
Order from SLA $1.10 62-20377

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1961, v. 13, no. 9, p. 416-419.

DESCRIPTORS: *Diamonds, *Lattices, *Crystal growth, Bonding, Crystallization.

Takei, Takeshi and Okamoto, Shoichi.
SPINEL-TYPE SODIUM FERRITE. Rept. 11 of Research for Metal Oxide Magnetic Material. [1962] 10p. (figs. refs. omitted).
Order from SLA $1.10 62-20484

Trans. of [Ri]kagaku Kenkyujo Hokoku (Japan) 1957, v. 33, no. 2, p. 53-57.

DESCRIPTORS: *Spinel, *Ferrites, *Sodium compounds, Oxides, *Crystal lattice defects, *Ferromagnetism, Phase studies, Chemical equilibrium, Thermodynamics, *Magnetic materials.

A solid solution where the lattice defect of γ-Fe_2O_3 is filled with Na^+ is obtained by arranging NaOH so as to act on γ-Fe_2O_3 at a high temperature. The limit of such a solid solution is Na_2O-$5Fe_2O_3$. Furthermore, the intensity of magnetism and the magnetic critical points of γ-solid solutions were measured, and the X-ray analysis of them was made. Then such a picture of equilibrium was imagined to presume thereby the chemical change taking place between γ-Fe_2O_3 and NaOH. (Author)

Thomas, Harry.
THE EXTERNAL PHOTOELECTRIC EFFECT OF THE ALKALI METALS. I. ITS DEPENDENCE ON THE LAYER THICKNESS OF POTASSIUM: RANGE OF THE PHOTOELECTRONS IN METAL. [1962] 42p. 47 refs.
Order from SLA $4.60 62-18864

Trans. of Zeit[schrift] f[ür] Phys[ik] (West Germany) 1957, v. 147, p. 395-418.
Another trans. is available from SLA $3.60 as 62-16689 [1962] [33]p.

DESCRIPTORS: *Alkali metals, *Photoelectric effect, *Potassium, Thin films, Volume, *Photons, Distribution, *Plasma physics.

For abstract see Technical Translations 9: 211, 1963.

Tyablikov, S. V.
ON POLARON THEORY [K Teorii Polyaronov]. [1961] [12]p. 20 refs. MDF T-109.
Order from OTS or SLA $1.60 62-15900

Trans. of Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1952, v. 22, no. 5, p. 513-519.

DESCRIPTORS: *Electrons, *Crystal lattices, *Polarization, Semiconductors, Dielectrics, Quantum mechanics, Theory.

There is established the equivalence of the equations describing the behavior of electrons in a crystal lattice taking into account the polarization they created for the strong and weak coupling cases and there are considered the conditions of the applicability of the corresponding approximate methods of solution. For the weak coupling case values are reproduced for certain quantities which characterize the properties of electrons in ionic crystals. (Author)

Tyablikov, S. V.
ON THE ENERGY SPECTRA OF ELECTRONS IN POLAR CRYSTALS, II. [Ob Energeticheskom Spektre Elektrona v Polyarnom Kristalle, II]. [1961] [12]p. 11 refs. MDF T-108.
Order from OTS or SLA $1.60 62-15899

Trans. of Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1954, v. 26, no. 5, p. 545-560.

DESCRIPTORS: *Electrons, *Crystal lattices, *Polarization, Dielectrics, Semiconductors, Quantum mechanics.

There is studied the form of the energy spectrum of an "excess" electron in a polar crystal assuming that the electron interaction with the polarized oscillations has adiabatic character. The reasoning is carried out approximately analogously to the method of almost free electrons. (Author)

Vol'kenshtein, F. F.
EFFECT OF IONIZING IRRADIATION ON THE ADSORPTIVE AND CATALYTIC PROPERTIES OF A SEMICONDUCTOR. [1962] 11p. 10 refs.
Order from OTS or SLA $1.60 63-10225

Trans. of Kinetika i Kataliz (USSR) 1961, v. 2, no. 4, p. 481-[489].

DESCRIPTORS: *Semiconductor devices, *Radiation damage, Adsorption, Catalysts, Temperature, *Chemisorption, Pressure, Ionization.

The problem on ionizing radiation's effect on the adsorptive and catalytic properties of semiconductors is formulated within the frame of the electronic theory on chemisorption and catalysis. The mechanism of irradiation effect on adsorption equilibrium, adsorption kinetics and catalytic reaction rate is analyzed as directly deriving from general conceptions of the electronic theory. The problem on relationship of the irradiation effect with the temperature, pressure and sample history is examined. (Author)

Wagenknecht, F.
ON THE DIELECTRIC AND MAGNETIC PROPERTIES OF SOME FERRITES AT HIGH FREQUENCY. [1962] 27p. (figs. tables refs. omitted).
Order from SLA $2.60 63-10001

Trans. of Frequenz (Germany) 1951, v. 5, [no. 6] ##p. 145-155 and [no. 7] p. 186-190.
##Another trans. is available from SLA mi$3.00, ph$6.30 as 59-10995 [1959] 40p.

DESCRIPTORS: *Dielectric properties, *Magnetic properties, *Ferrites, *High frequency.

For abstract see Technical Translations 2: 375, 1959.

Theoretical Physics

Syrkin, Ya. K.
EFFECTIVE CHARGE AND ELECTRONEGATIVITY. [1962] 24p. 41 refs.
Order from OTS or SLA $2.60 63-10067

Trans. of #Uspekhi Khimii (USSR) 1962, v. 31, no. 4, p. 397-416.

DESCRIPTORS: Quantum mechanics, *Electron density, *Ionization, *Electron charge, Absorption spectrum, Polarization, Dipole moments.

This paper is about the determination of the "degree of ionization", or, if a physical formulation of the effective charge on the atom is given, about the distribution of electron density in the molecule.

Timan, B. L.
THE EFFECT OF THE INTERACTION OF IONS ON THEIR EQUILIBRIUM CONCENTRATION IN MULTIPLE THERMALLY IONIZED GASES, tr. by Stephen G. Brush. [1962] [6]p. 3 refs.
Order from OTS or SLA $1.10 UCRL Trans-674-L

Trans. of Zhur[nal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1954, v. 27, p. 708-711.

DESCRIPTORS: *Gas ionization, *Ions, Chemical equilibrium, Thermodynamics, Pressure, Ionization, Gases.

With the aid of the Debye-Hückel method for a fully ionized gas, the effect of Coulomb interactions of ions on the ionization equilibrium for multiple thermal ionization is considered. (Author)

Thermodynamics

Alekseev, N. V., Gerasimov, Ya. I., and Evseev, A. M.
INVESTIGATION OF THE THERMODYNAMIC PROPERTIES OF LIQUID ALLOYS OF INDIUM AND BISMUTH. [1962] [5]p. 2 refs.
Order from OTS or SLA $1.10 63-13721

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 134, no. 3, p. 618-620.

DESCRIPTORS: Thermodynamics, *Indium alloys, *Bismuth alloys, *Liquid metals.

Brodskii, A. Ts., Kremlevskii, V. P., and Savateev, A. V.
NEW METHODS OF ESTABLISHING A THERMODYNAMIC SCALE IN THE LOW TEMPERATURE REGION (Novye Metody Osushchestvleniya Termodinamicheskoi Shkaly v Oblasti Nizkikh Temperatur) tr. by P. Thistlethwaite. [1962] [17]p. (foreign text included) 3 refs. [CSIRO Trans.] no. 5921.
Order from OTS or SLA $1.60 63-15975

Trans. of Vsesoyuznyi Nauchno-Issled[ovatel'skii] Inst[itut] Met[rologii]. Trudy (USSR) 1960, v. 49, p. 24-29.

DESCRIPTORS: *Thermodynamics, Scale, *Low temperature research, Electromagnetism, Oscillation, Acoustics, *Thermometers, Frequency, *Measuring devices (Electrical and Electronic), Design.

Preliminary results are outlined on the establishing of a thermodynamic scale at low temperature by the method of the electro-acoustic gas thermometer and by the method of finding the number of thermal noise impulses. Results are given for the boiling point of normal hydrogen and for the boiling point of oxygen. In the method used a temperature measurement is accomplished using frequency measuring devices; thus is obtained a very accurate method, the accuracy of which increases with lowering of the temperature. (Author)

Gel'd, P. V., and Kusenko, F. G.
THE HEAT CONTENT AND HEAT CAPACITY OF NIOBIUM OXIDES AND CARBIDES AT HIGH TEMPERATURES. [1962] [12]p. 24 refs.
Order from OTS or SLA $1.60 63-13718

Trans. of Akad[emiya] Nauk SSSR. Otdel[enie] Tekhn[icheskikh] Nauk. Izvest[iya]: Metallurg[iya] i Toplivo, 1960, no. 2, p. 79-86.

DESCRIPTORS: *Thermochemistry, *Niobium compounds, *Oxides, *Carbides, Temperature, Heat, *Entropy.

Gorokhov, L. N.
NEW METHODS OF CALCULATION IN MASS SPECTROMETRIC INVESTIGATIONS WITH A DOUBLE EFFUSION CHAMBER AND THE THERMODYNAMIC PROPERTIES OF LITHIUM IODIDE. [1962] [7]p. 6 refs.
Order from OTS or SLA $1.10 63-13424

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1962, v. 142 [no. 1] p. 113-116.

DESCRIPTORS: *Mass spectroscopy, Diffusion, *Thermodynamics, *Lithium compounds, *Iodides.

Hansen, Michael and Jeschar, Rudolf.
COMBUSTION WITH SIMULTANEOUS HEAT TRANSFER. II. COMPARISON OF THEORY AND EXPERIMENT. Rept. no. 476 of Fuel and Power Dept. [of the] Verein Deutscher Eisenhüttenleute. Sep 59 [29]p. 7 refs.
Order from SLA $2.60 62-14385

Trans. of Archiv f[ür] d[as] Eisenhüttenwesen (West Germany) 1959, v. 30, no. 7, p. 397-405 (Verein Deutscher Eisenhüttenleute (West Germany). Berichte-476).
Another trans. is available from BISI £ 6 10s as BISI-1429, 1959.

DESCRIPTORS: *Heat transfer, Combustion, *Combustion chambers, *Thermodynamics, Theory, Design, Tests, Measurement, Integration, Calorimeters.
For abstract see Technical Translation 3:326, 1960

Kusenko, F. G., and Gel'd, P. V.
SOME PROPERTIES OF NbO_2. [1962] [8]p. 9 refs.
Order from OTS or SLA $1.10 63-15133

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Tsvetnaya Metallurgiya (USSR) 1960 [v. 3] no. 4, p. 102-106.

DESCRIPTORS: *Niobium compounds, *Oxides, *Heat transfer, Calorimeter, Temperature, Electrical conductance, Thermal expansion, Phase transitions.

An investigation was made of the heat content of NbO_2 in the temperature range from 298° to 1500°K. Equations are proposed for the temperature dependence of the heat content and heat capacity of NbO_2. Measurements of the heat content, electrical conductivity, and coefficient of thermal expansion established the fact that NbO_2 undergoes a phase transition in the vicinity of 1040°K. (Author)

Ogorodnikov, S. K., Kogan, V. B., and Nemtsov, M. S.
LIQUID-VAPOR EQUILIBRIUM IN BINARY AND TERNARY SYSTEMS, FORMED BY C_5 HYDROCARBONS WITH DIMETHYL-FORMAMIDE. [1962] 8p. 10 refs.
Order from OTS or SLA $1.10 63-10234

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34 [no. 11] p. 2441-2446.

DESCRIPTORS: Liquids, Vapors, Equations of state, Thermodynamics, *Hydrocarbons, Methyl radicals, *Formamides, *Phase studies.

Liquid-vapor equilibria were studied experimentally in three binary and in three ternary systems, formed by dimethylformamide with C_5 hydrocarbons of different classes. It was found, that dimethylformamide additior provokes up to a 4.7 fold increase in the relative volatility of the C_5 hydrocarbons in the paraffin-diene system, up to a 2.8 fold increase in the paraffin-olefin system and up to a 2.2 fold increase in the olefin-diene system. (Author)

Polikarpov, D. P. and Bakhman, N. N.
FLAME PROPAGATION ALONG THE CONTACT SURFACE OF METALS WITH SOLID OXIDIZING AGENTS 14 Jan 62 [14]p. 5 refs. FTD-TT-62-1570.
Order from OTS or SLA $1.60 63-19074

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 7, p. 11-17.
Another trans. is available from ICE in v. 3, no. 1, $15.00.

DESCRIPTORS: *Flame propagation, *Oxidizers, Metals, Aluminum, Tungsten, Combustion.

The results of an experimental investigation of the velocity of flame propagation along the contact surface of metals with solid oxidizing agents are presented. The dependence of this velocity on characteristic size, on the structure of the metal layer, and on pressure is examined. (Author)

Shchukarev, S. A., Smirnova, E. K. and others.
THE ENTHALPY OF FORMATION OF TANTALUM PENTACHLORIDE AND PENTABROMIDE. [1962] [8]p. 17 refs.
Order from OTS or SLA $1.10 63-13400

Trans. of Leningrad U. Vestnik (USSR) 1960, v. 15, no. 16, Ser[iya] Fiz[ika] i Khim[ii] no. 3, p. 113-119.

DESCRIPTORS: Enthalpy, *Tantalum compounds, *Chlorides, Bromides, *Heat of formation, Hydrolysis, Heat of reaction.

Ts'ai, K'uo-en.
HEAT TRANSFER IN A TURBULENT FLUID FLOW AT LARGE PRANDTL NUMBERS AND VARIABLE VISCOSITY. 14 Feb 63 [11]p. 5 refs. FTD-TT-62-1890
Order from OTS or SLA $1.60 63-19093

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1962, v. 5, no. 8, p. 10-16.

DESCRIPTORS: Fluid flow, Turbulence, *Heat transfer Specific heat, Viscosity, Temperature, Distribution, Velocity, Numerical analysis.

This article examines the problem of heat transfer in a turbulent fluid flow at large Prandtl numbers with consideration of the temperature effect on the change in viscosity. Expressions are derived for velocity and temperature distribution in the flow. (Author)

Vukalovich, M. P. and Altunin, V. V.
AN EXPERIMENTAL INVESTIGATION OF THE p-v-t DEPENDENCE OF CARBON DIOXIDE [Eksperimental'noye Issledovaniye Zavisimosti p-v-t Uglekisloty]. [1962] [14]p. 11 refs.
Order from OTS or SLA $1.60 63-13425

Trans. of Teploenergetika (USSR) 1959, v. 6, no. 11, p. 58-65.
Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 61-13124, DSIR LLU M. 1796 [1960] 13p.

DESCRIPTORS: *Carbon dioxide, Pressure, Volume, Temperature, Gas analyzers, Adsorbents, Equations of state.

For abstract see Technical Translations 5: 274, 1961.

Wave Propagation

Al'pert, Ya. L. and Pitaevskii, L. P.
SCATTERING OF ELECTROMAGNETIC WAVES BY INHOMOGENEITIES EXCITED IN A PLASMA BY A RAPIDLY MOVING BODY. Apr 63 [8]p. 4 refs.
Available from AIAA in Its Journal, v. 1, no. 4, $5.00

Trans. of Geomagnetizm i Aeronomiya (USSR) 1961, v. 1, no. 5, p. 709-724.

DESCRIPTORS: *Plasma physics, *Electromagnetic waves, Scattering, Excitation, Magnetic fields, Motion, Particles, Numerical analysis, *Ionospheric propagation, Satellites (Artificial), Differential cross section

Pitaevskii, L. P.
PERTURBATIONS PRODUCED IN A PLASMA BY A RAPIDLY MOVING BODY. Apr 63 [7]p. 7 refs.
Available from AIAA in Its Journal, v. 1, no. 4, $5.00

Trans. of Geomagnetizm i Aeronomiya (USSR) 1961, v. 1, no. 2, p. 194-208.

DESCRIPTORS: *Plasma physics, Perturbation theory, Magnetic fields, Motion, Particles, *Electromagnetic waves, Scattering, *Fourier analysis, Equations of motion, Radio waves, *Propagation, Electron density

Zwistocki-Moscicki, J.
RADIO TRANSMISSION BY IMPULSE MODULATION. [1962] 8p. (figs. formulae omitted).
Order from SLA $1.10 63-10053

Trans. of Assoc[iation] Suisse des Élec[triciens]. Bull[etin] 1945, v. 36, no. 15, p. 459-460, 533-534.

DESCRIPTORS: *Radio transmission, *Pulse modulation, Frequency modulation, Radio signals, *Radio transmitters, *Facsimile transmission.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ACTIVITIES OF THE HUNGARIAN ACADEMY OF SCIENCES. 12 May 61 [12]p. JPRS: 4603.
Order from OTS or SLA $1.60 62-19183

Trans. of Magyar Tudomany (Hungary) 1961, v. 6[68] no. 1, p. 43-47, 58.

DESCRIPTORS: *Scientific organizations, *Conferences, *Scientific research, Hungary

Contents:
Departmental and institutional meetings of the Hungarian Academy of Sciences
Evaluation by the Presidium of the Hungarian Academy of Sciences of the work of scientific qualifying committee

ACTIVITIES IN THE UKRAINIAN ACADEMY OF SCIENCES. 1 Apr 63 [24]p. JPRS: 18466.
Order from OTS $0.75 63-21466

Trans. of Akademiya Nauk URSR, Kiev. Dopovidi, 1962, no. 7, p. 970-975.
Another trans. of ##(p. 970-971, 974-975) is available from OTS or SLA $2.60 in 62-13316, JPRS-16446, 30 Nov 62 [22]p.

DESCRIPTORS: Scientific organizations, *Cybernetics, Computers, Analog computers, Education, Scientific personnel, *Scientific research, Chemistry, Polymers, Automation, Power supplies, Electrical engineering, Medical equipment, Bioelectronics, Welding, Language, Metallurgy

Contents:
##On the state and prospects of the development of research in cybernetics in the Ukraine and organization of the Institute of Cybernetics within the framework of the Academy of Sciences UkSSR
Organization of scientific research and training of personnel by the institutes of the Academy of Sciences UkSSR together with higher educational institutions of the UkSSR
The state, prospects of development, and trend of the institute of chemistry of polymers and monomers of the Academy of Sciences UkSSR
Stepping up scientific research on problems of electrification and automation of production processes
Organization of a supporting group of the academic institute in hospital
New departments and laboratories
##Bonuses for work of design and introduction of new engineering methods
Miscellaneous announcements

COMMUNIST CHINA'S SCIENCE AND TECHNOLOGY: TRANSLATIONS NO. 21. 8 Mar 63 [85]p. JPRS: 18023.
Order from OTS $2.25 63-21279

Trans. of K'o Hsueh T'ung Pao (Chinese People's Republic) 1962, no. 9, p. 1-2, 42-49, 52-54; Chung Kuo Hsin Wen (Chinese People's Republic) 1962, 6 Dec, p. 10; Shang Hai Chi Hsieh (Chinese People's Republic) 1962, no. 8, p. 43; Kuang Ming Jih Pao (Chinese People's Republic) 1962, 18 Nov, p. 2; 19 Dec, p. 2; 22 Dec, p. 2; 1963; 31 Jan, p. 3; and one unidentified article.

DESCRIPTORS: *Reports, Theory, *Biochemistry, *Metabolism, *Soil mechanics, *Communication theory, *China, *Weather stations, *Casting, *Friction, *Lubricants, *Marine geology, *Agriculture, Agricultural machinery, *Conferences.
Contents:
Some important developmental trends in the domain of fundamental biochemistry theoretics, by Wang Ying-lai
Metabolic feedback and metabolism control, by Shen Ch'ao-wen
Preliminary research on soil colloid charge, by Chang Hsiao-nien and Chiang Neng-hui
Scientific conference on communications operations, by Chu Yung-chin
The development of meteorological stations in China, by Jao Hsing
China mechanical engineering society holds National Annual Convention on casting (no. 1)
Scientific research on friction, wear, and lubricants, by Ch'en Tu-hui and Su, Kuei-sheng
Deputy director Academia Sinica Physics Institute discusses: theories, practices, interests, and others, by Lu Hsueh-shan
A tentative discussion on several major theoretical questions concerning the shallow-sea geology of China, by Ch'in Yu-shan
Development of ailanthus Ricini sericulture as an aid to agriculture production, by Wang Kao-shun
Close of the National Agricultural Machinery Scientific Research Conference.

CYBERNETICS IN EDUCATION AND AUTOMATION. 22 Apr 63, 21p. 17 refs. JPRS: 18832.
Order from OTS $0.75 63-21637

Trans. of Pädagogik (East Germany) 1963 [v. 18] no. 2, p. 159-167 and Feingeräte Technik (East Germany) 1963 [v. 12] no. 3, p. 97-98.

DESCRIPTORS: *Cybernetics, *Education, Training, *Automation, Learning, Artificial intelligence, Reasoning

Contents:
Cybernetics in relation to improved education and training, by Wilfried Lange
Cybernetics; automation; nature of work, by G. Klaus

Chokin, Sh. Ch.
RESULTS OF THE SCIENTIFIC ACTIVITY OF THE ACADEMY OF SCIENCES, KAZAKH SSR FOR 1958 (Itogi Nauchnoy Deyatel'nosti Akademii Nauk Kazakhskoy SSR za 1958 God). 25 Jan 61, 57p. JPRS: 7490.
Order from OTS $1.50 61-21180

Trans. of Akademiya Nauk Kazakhskoy SSR, Alma-Ata Vestnik, 1959 [v. 15, no. 4] p. 3-25.

DESCRIPTORS: *Scientific organizations, Scientific research, Scientific personnel

Manolova, V. P.
ELECTRONIC COMPUTERS: TRANSFORMATION OF TYPES S+S, S+P+S, V+S, AND V+P+S RUSSIAN SYNTAGMS. 26 Mar 63 [38]p. 14 refs. AID rept. T-63-41.
Order from OTS or SLA $3.60 63-19034

Trans. of mono. Elektronnye Vychislitel'nye Mashiny. Transformatsii Sintagm Russkogo Yazyka Tipa S+S, S+P+S, S+P+S, V+S, V+P+S, Moscow, 1962, 51p.

DESCRIPTORS: Digital computers, *Machine translation, *Language, Classification.

The present article deals with the transformational analysis of syntagms. Use is made of the syntagm classification appearing in the Akademicheskaya grammatika russkogo yazyka (Academy of Sciences USSR Grammar of the Russian Language), and an (Research Methods, Techniques and Equipment, TT, investigation is undertaken as to what syntagms can be synonymous with those treated. In this work are cited all the syntagms that can be synonymous with the syntagms under investigation, said syntagms forming so-called transformation series. (Author)

Panzerbieter, H.
ELECTRONIC SWITCHING CIRCUITS FOR AUTOMATIC TELEPHONE SYSTEMS. [1962] 5p. (figs. omitted).
Order from SLA $1.10 62-20477

Trans. from VDE [Fachberichte] (West Germany) 1953, v. 17.

DESCRIPTORS: Automatic, *Telephone communication systems, *Switching circuits, *Electronic relays.

Thiel, Rainer.
CONFERENCE ON THE SIGNIFICANCE OF CYBERNETICS FOR SCIENCE, TECHNOLOGY, AND INDUSTRY IN THE GDR. 22 Apr 63, 11p. JPRS: 18805.
Order from OTS $0.50 63-21620

Trans. of Wirtschaftswissenschaft (East Germany) 1963 [v. 11] no. 3, p. 436-443.

DESCRIPTORS: *Conferences, *Cybernetics, Science, Psychology, Economics, Mathematics, Industrial production, Automation, East Germany

SOCIAL SCIENCES

Smirnov, N. N.
CONCERNING THE DEVELOPMENT OF ENGLISH NOUNS AFTER MIGRATIONS INTO NEW COUNTRIES (EXEMPLIFIED BY THE NAMES OF AQUATIC ANIMALS AND PLANTS). [1962] 10p. 18 refs.
Order from OTS or SLA $1.10 62-20408

Trans. of Akademiya Nauk SSSR, Otdelenie Literatury i Yazyka, Izvestiya, 1962, v. 21, no. 1, p. 34-40.

DESCRIPTORS: *English language, *Philology, Plants, Aquatic animals, *Marine biology, Quantitative analysis, Vocabulary.

A complete collection (4698 terms) was made of names of aquatic plants and animals commonly used in various English-speaking countries. A quantitative comparative analysis of this category of English nouns showed that development took place along similar lines in all the the countries from the moment of settling. In all the new countries the number of new terms was approximately twice the number of original English names. The syntactic method predominates in the formation of new words from English material. Names formed in this way constitute from 64% to 80% of the overall number of names formed from English materials in the various countries. The number of names of aquatic organisms penetrating English from Russian is insignificant; however, there are many names which are common to both the Russian and English languages. (Author)

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-CHICOM/6155
Fang Po-yung
THEORY AND MANUFACTURE OF CHEMICAL FIBERS (Hua Hsüeh Hsien Wei Ti Yüan Li Ho Chih Tsao) (v. 2) Shanghai, K'o Hsüeh Chi Shu Ch'u Pan She. 1961. 280 p. [331-660]. 3000 copies printed.

BR-SOV/6157
WELDING EQUIPMENT (Apparatura svarochnogo proizvodstva). Moscow, Mashgiz, 1961. 62p. (Series: Priborostroyeniye i sredstva avtomatizatsii na vystavke dostizheniy narodnogo khozyaystva SSSR, 1961). 2500 copies printed.

BR-SOV/6162
Trubin, V. N., and I. Ya. Tarnovskiy.
PRODUCTION OF HEAVY FORGINGS; RESULTS OF A STUDY OF TECHNOLOGICAL METHODS (Kovka krupnykh pokovok; rezul'taty issledovaniya tekhnologicheskikh rezhimov). Moscow, Mashgiz, 1962. 223 p. 3800 copies printed.

BR-SOV/6163
Pridantsev, Mikhail Vasil'yevich
EFFECT OF IMPURITIES AND RARE-EARTH ELEMENTS ON PROPERTIES OF ALLOYS (Vliyaniye primesy i redkozemel'nykh elementov na svoystva splavov). Moscow, Metallurgizdat, 1962. 206p. 3850 copies printed.

BR-SOV/6164
Zakutinskiy, David Iosifovich and Lidiya Nikolayevna Selivanova.
BIOLOGICAL EVALUATION OF DRUGS FOR PROPHYLAXIS AND CURE OF RADIATION SICKNESS (Biologicheskaya otsenka preparatov dlya profilaktiki i lecheniya luchevoy bolezni). Moscow, Medgiz, 1960. 150p. 6000 copies printed.

BR-SOV/6165
Manasevich, Arkadiy Davidovich
PHYSICAL FUNDAMENTALS OF THE STRESSED STATE AND STRENGTH OF METALS (Fizicheskiye osnovy napryazhennogo sostoyaniya i prochnosti metallov). Moscow, Mashgiz, 1962. 196p. 5500 copies printed.

BR-SOV/6166
Kazantsev, Aleksandr Petrovich
STEPS TO THE FUTURE (Stupeni gryadushchego). Moscow, Gospolitizdat, 1962.

BR-SOV/6167
Zaymovskiy, Aleksandr Semenovich and others.
FUEL ELEMENTS OF ATOMIC REACTORS (Teplovydelyayushchiye elementy atomnykh reaktorov). Moscow, Gosatomizdat, 1962. 369p. Errata slip inserted. 4000 copies printed.

BR-SOV/6169
Zemzin, Viktor N, and Leonid Davydovich Frenkel'
WELDED STRUCTURES IN STEAM AND GAS TURBINES (Svarnyye konstruktsii parovykh i gazovykh turbin). Moscow, Mashgiz, 1962. 222p. 3000 copies printed.

BR-SOV/6170
Karpenko, Georgiy Vladimirovich, and Roman Ivanovich Kripyakevich
THE EFFECT OF HYDROGEN ON STEEL PROPERTIES (Vliyaniye vodoroda na svoystva stali). Moscow, Metallurgizdat, 1962. 195p. 4250 copies printed.

BR-SOV/6171
Livanov, Vladimir Aleksandrovich , Anna Arkhipovna Bukhanova, and Boris Aleksandrovich Kolachev
HYDROGEN IN TITANIUM (Vodorod v titane). Moscow, Metallurgizdat, 1962. 244p. Errata slip inserted. 2900 copies printed.

BR-SOV/6172
Starikova, M. V.
SELF-INDUCED OSCILLATIONS AND SLIDING MODES IN AUTOMATIC REGULATION AND CONTROL SYSTEMS (Avtokolebaniya i skol'zyashchiy rezhim v sistemakh avtomaticheskogo regulirovaniya i upravleniya) Moscow, Mashgiz, 1962. 194p. Errata slip inserted. 6300 copies printed.

BR-SOV/6173
Kaplan, Marlen Pavlovich
ANALYSIS OF GAS-TURBINE INSTALLATION SCHEMES FOR ELECTRIC POWER STATIONS (Analiz skhem gazoturbinnykh ustanovok dlya elektrostantsiy). Kiyev, Gostekhizdat, 1962. 109p. 1800 copies printed.

BR-SOV/6174
Kiselev, Sergey Petrovich
ROCKET AERODYNAMICS (Aerodinamika raket). Moscow, Voyenizdat, 1962. 93p. (Series: Za voyenno-tekhnicheskiye znaniya. Raketnaya tekhnika) 15,000 copies printed.

BR-SOV/6175
Rabkin, Izrail' Gabriyeliyevich
FLIGHT SAFETY (Bezopasnost' poletov). Moscow, Voyenizdat M-va oborony SSSR, 1962. 132p. 10,000 copies printed.

TRANSLATIONS IN PROCESS

Agre, V. L. and others.
TECHNICAL PROGRESS IN THE FERROUS METALLURGY: SELECTIONS.
Mono. Tekhnicheskikh Progress v Chernoi Metallurgii SSSR: Prokatnoe i Trubnoe Proizvodstvo, Moscow, 1962, p. 121-245.

Ailloud, J. and Millot, J. P.
OUTLINE OF A PROGRAM FOR THE CABRI REACTOR (Projet de Programme Concernant la Pile CABRI).
Commissariat a l'Energie Atomique (France) rept. DEP/SEPP/CAB/no. 01/63, 1963, 37p.

Bakulov, I. A.
PRACTICAL EXERCISES IN EPIZOOTIOLOGY FROM MICROBIOLOGY: SELECTIONS.
Mono. Prakticheskie Zanyatiya po Epizootologii s Mikrobiologiei, Moscow, 1962, p. 46-67, 77-86, 96-103, 109-124, 141-158, 180-185, 197-199, 230-236.

Bruck, L.
THE STRUCTURE OF THIN METAL LAYERS EVAPORATED ON ROCK SALT.
Annalen der Physik (Germany) 1936 [ser. 5] v. 26, p. 233-257.

Buleev, N. I.
THEORETICAL MODEL OF THE MECHANISM OF TURBULENT EXCHANGE IN LIQUID FLOWS.
Mono. Teploperedacha (Heat Transfer) Moscow, 1962, p. 64-98.

Marhol, Milan.
ION EXCHANGERS. A SURVEY OF THEIR CHARACTERISTICS PROPERTIES.
Chemicke Listy (Czechoslovakia) 1962, v. 56, p. 728-768.

Perelyg'n, V. P. and Tret'yakova, S. P.
RADIOGRAPHY OF SPONTANEOUS NUCLEAR FISSION.
Joint Institute for Nuclear Research (USSR) no. P-1118.

Raimbault, P.
MEASUREMENT OF AMPLITUDE FLUCTUATIONS IN A RAPID RESPONSE PHOTO MULTIPLIER (Mesure des Fluctuations à l'Amplitude d'un Photomultiplicateur à Réspons Rapide).
Commissariat à l'Energie Atomique (France) no. 1770, 1962.

Viallard, Rodolphe.
SOME EQUILIBRIUMS OF HYDROGEN AND OF DEUTERIUM WITH CERIUM AND GADOLINIUM (Sur Quelques Equilibres de l'Hydrogène et du Deutérium avec le Cérium et le Gadolinium).
Annales de Chimie (France) 1945 [ser. 11] v. 20, p. 5-72.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 9 , Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.